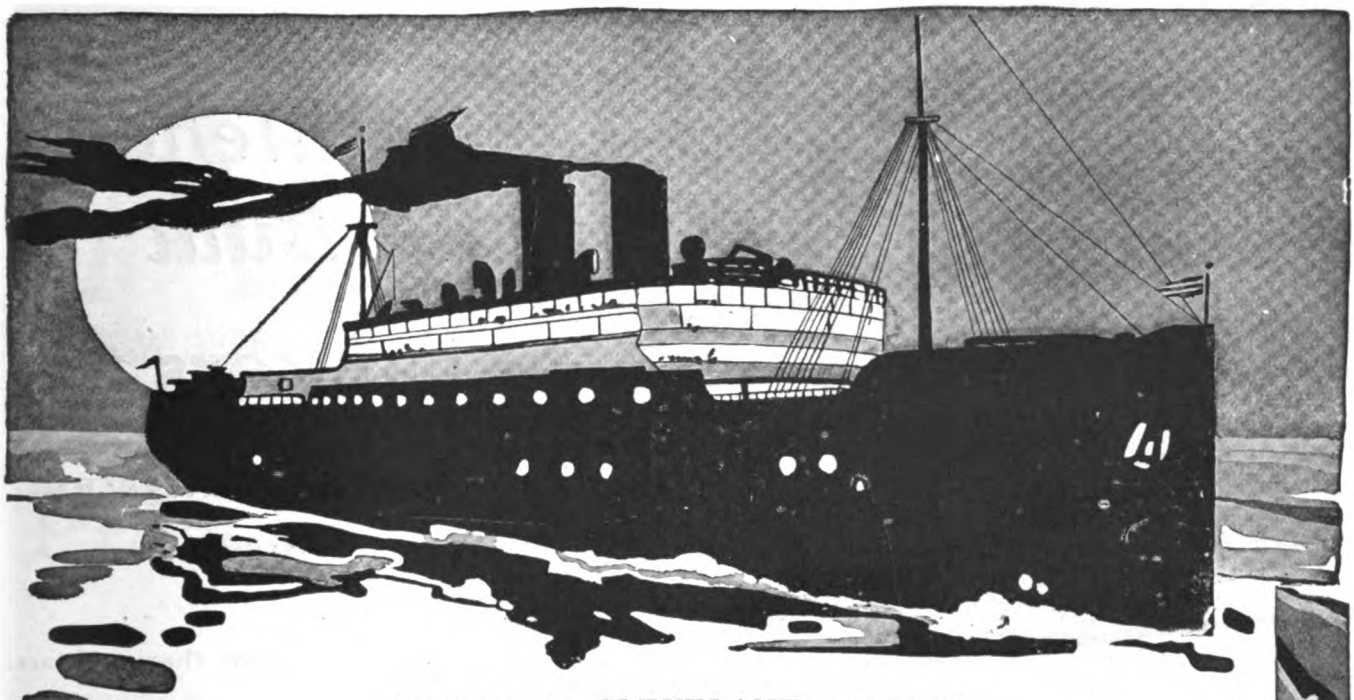


NEW YORK—CLEVELAND—LONDON

Marine Review

THE BUSINESS OF TRANSPORTATION BY WATER

Vol. 52 APRIL, 1922 No. 4

Published by The Penton Publishing Co., Cleveland, Ohio, U. S. A.

IN THIS ISSUE

BRANCH OFFICES

BOSTON	426 Old South Bldg.	NEW YORK	220 Broadway
CHICAGO	1147 People's Gas Bldg.	PITTSBURGH	2148-49 Oliver Bldg.
CINCINNATI	501-505 Commercial Tribune Bldg.	SAN FRANCISCO	8 Monadnock Bldg.
HARTFORD	P. O. Box 1231	WASHINGTON	40 Metzerott Bldg.

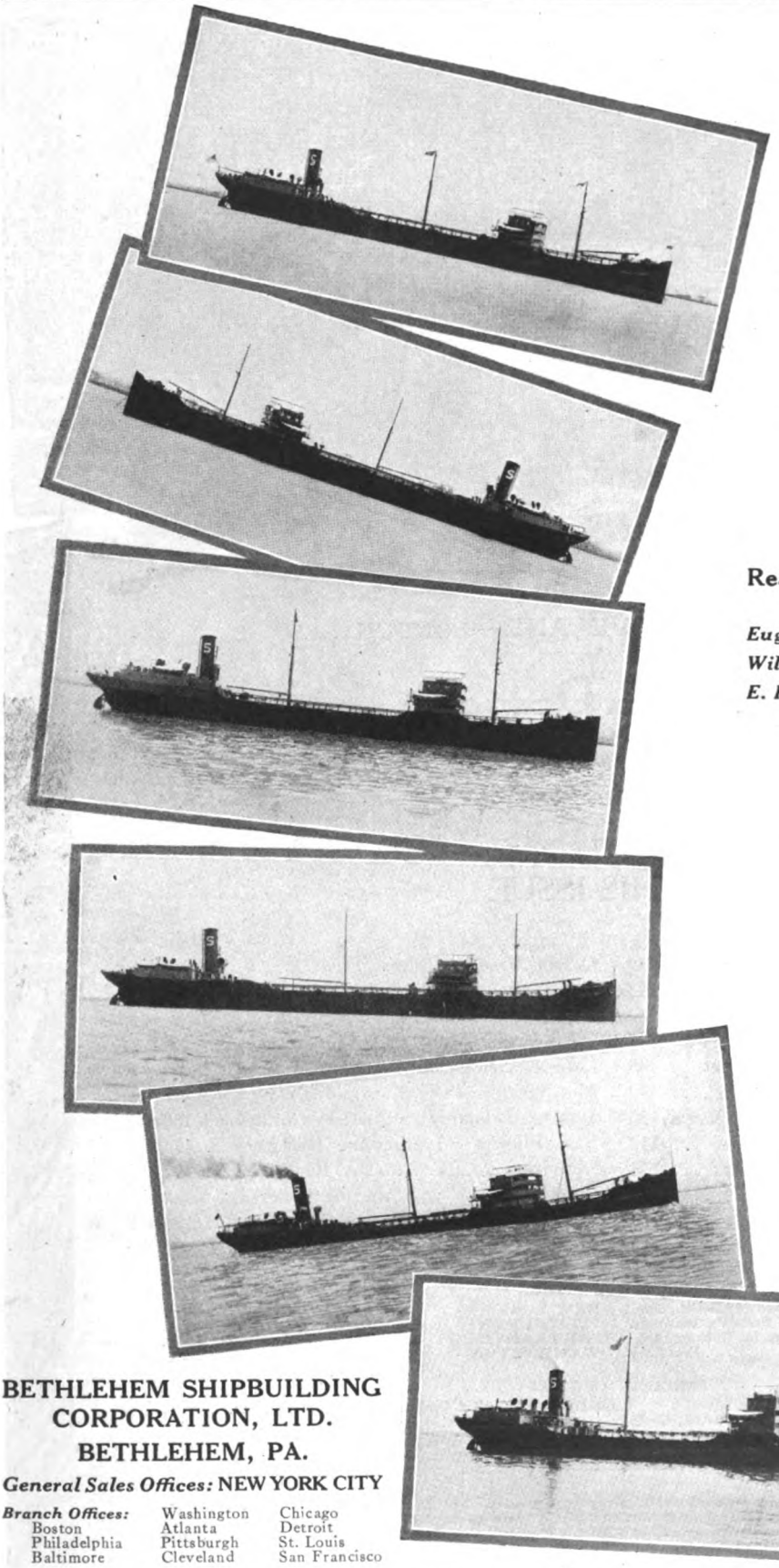
FOREIGN OFFICES

PARIS, FRANCE 224 Rue de Rivoli LONDON, ENG., 2-3 Caxton House, Westminster, S. W. 1.
BIRMINGHAM, ENG. - Prince's Chambers

Cable Address IROTRAPEN, London

Subscription, United States and its possessions, $3 per year; Canada and other Foreign Countries, $4 per year. Single copies 25 cents. Back numbers over three months 50 cents. The Cleveland News Co. will supply the trade with MARINE REVIEW through the regular channels of the American News Co. European Agent, The International News Co., Breams building, Chancery Lane, London, E. C., England.

Member, the Audit Bureau of Circulations and Associated Business Papers, Inc.
Entered at the Post Office at Cleveland, Ohio, as Second Class Matter, under the act of March 3, 1879



Bethlehem-Built Tankers for

Sinclair Navigation Company

Reading top to bottom, the vessels are:

Eugene V. R. Thayer	*J. Fletcher Farrell*
William Boyle Thompson	*Albert E. Watts*
E. R. Kemp	*E. W. Sinclair*

BETHLEHEM PLANTS

FORE RIVER, Boston, Mass.
MOORE, Elizabeth, N. J.
UNION, San Francisco, Cal.
SAN PEDRO, Los Angeles, Cal.
HARLAN, Wilmington, Del.
SPARROW'S POINT, Sparrow's Point, Md.
BALTIMORE DRY DOCKS, Baltimore, Md.
REDINGTON, Redington, Pa.

BETHLEHEM SHIPBUILDING CORPORATION, LTD.
BETHLEHEM, PA.

General Sales Offices: NEW YORK CITY

Branch Offices:
Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Cleveland, Chicago, Detroit, St. Louis, San Francisco

BETHLEHEM

Please mention MARINE REVIEW *when writing to Advertisers*

Shipbuilding Ship operation Ship maintenance

Marine Review

NEW YORK CLEVELAND LONDON

VOL. 52 APRIL, 1922 No. 4

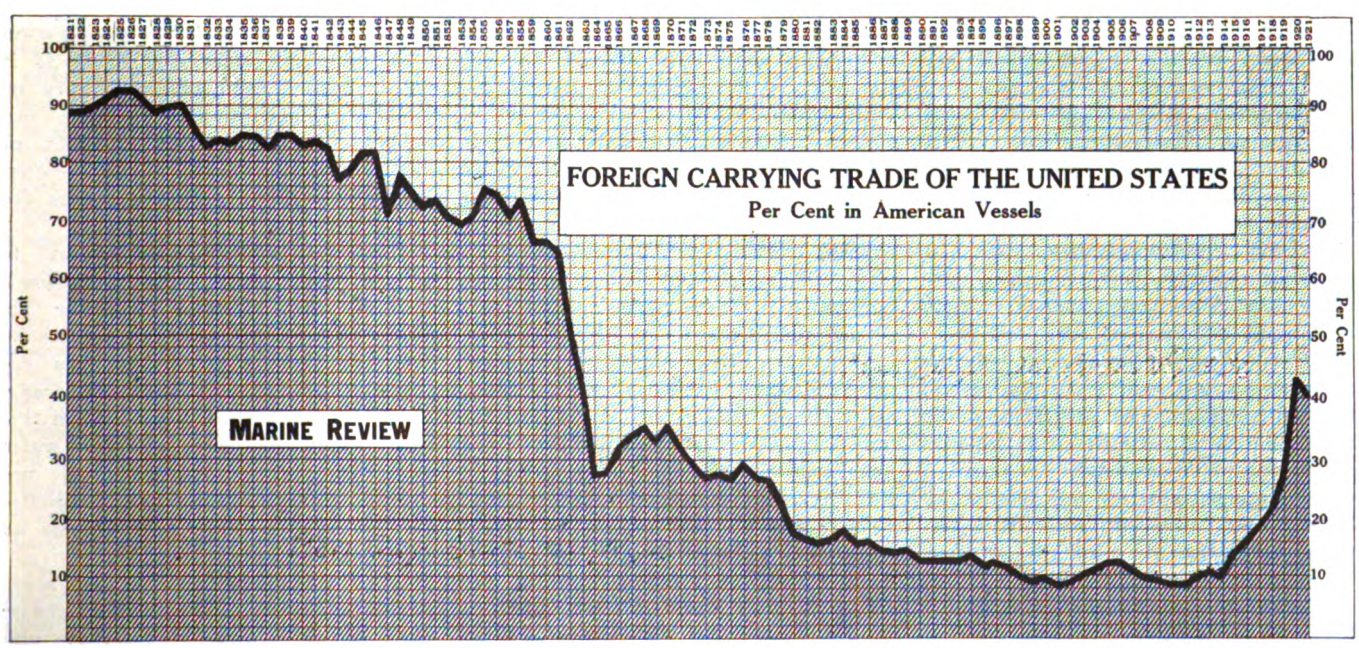
President Back of Ship Aid Plan

Executive Outlines Proposal Which Has Support of Marine Leaders and Is Winning Congressional Favor

FOR the first time in more than a century, two of the three principal divisions of the United States government—the executive and the legislative—jointly have considered America's prime necessity of a merchant marine. In the house of representatives, President Harding, on Feb. 28, read his special message to congress in which he urged state aid for the nation's merchant fleet. It was the topic of the entire message and has already made more progress than anything before suggested as a possible solution of the country's marine problem. Direct and indirect assistance in the maintenance of a merchant marine, provided mainly through funds from imports, and also relief from present restrictive measures, is urged by the President. He pointed out the need of the nation and emphasizd it with the fact limitation of naval armaments requires for the country's protection, the ownership of an adequate commerce fleet. The President's address, in its principal part, follows:

"I bring to you the suggestions which have resulted from a comprehensive study which are recommended to me by every member of the United States shipping board. It is a program of direct and indirect aid to shipping to be conducted by private enterprise. It is proposed to apply generally the benefits which it was designed to derive from discriminating duties to all ships engaged in foreign commerce, with such limitation on remuneration as will challenge every charge of promoting special interests at public cost.

"In lieu of discriminating duties on imports brought to us in American bottoms it is proposed to take 10 per cent of all duties collected on



AMERICA'S RECORD IN CARRYING HER OWN FOREIGN TRADE

Charted above is the record of the last century, taken from official government records. The graph shows the proportion of trade carried in American (below) and foreign (above) vessels. From the peak of 92.5 per cent in 1826, the American proportion dropped steadily, being an even 50 per cent in 1862, declining regularly till 1901 when only 8.2 per cent of the trade was handled in American ships. In 1914, the figure was still only 9.7 per cent. The war spurt drove this up to 42.7 per cent in 1920, but the trend has since been downward. President Harding's active support of the proposed subsidy is inspired by the conviction that the American proportion must be brought and maintained above the 50 per cent mark.

imports brought to us in American or foreign bottoms, and create therefrom a merchant marine fund. To this fund shall be added the tonnage charges, taxes and fees imposed on vessels entering the ports of continental United States, also such sums as are payable to American vessels by the post office department for the transportation by water of foreign mails, parcel posts excepted.

"Out of this fund shall be paid the direct aid in the development and maintenance of an American merchant marine. The compensation shall be based on one-half of 1 cent for each gross ton of any vessel, regardless of speed, for each 100 miles traveled. When the speed is 13 knots or over, but less than 14, two-tenths of a cent on each gross ton shall be added; for 14 knots, three-tenths of a cent; for 15 knots, four-tenths of a cent; for 16 knots, five-tenths; for 17 knots, seven-tenths; for 18 knots, nine-tenths; for 19 knots, eleven-tenths; for 20 knots, thirteen-tenths shall be added to the basic rate. For 23 knots the maximum is reached at 2.6 cents for each gross ton per 100 miles traveled.

Subsidy to Be Refunded

"I will not attempt the details of requirements, or limitations, save to say that all vessels thus remunerated shall carry the United States mails, except parcel post, free of cost, and that all such remuneration must end whenever the owner of any vessel or vessels shall have derived a net operating income in excess of 10 per cent per annum upon his actual investment, and therafter the owner shall pay 50 per cent of such excess earnings to the merchant marine fund, until the full amount of subsidy previously received is returned to its source. In other words, it is proposed to encourage the shipping in foreign trade until the enterprise may earn 10 per cent on actual investment, whereupon the direct aid extended is to cease and the amount advanced is to be returned out of a division with the government of profits in excess of that 10 per cent. The provision makes impossible the enrichment of any special interest at public expense, puts an end to the government assumption of all losses, and leaves to private enterprise the prospective profits of successful management.

"The cost of such a program probably will reach fifteen millions the first year, estimated on the largest possibilities of the present fleet. With larger reimbursement to high-speed vessels and the enlargement of the merchant marine to a capacity comparable with our commerce the total outlay may reach the limits of thirty millions, but it is confidently believed that the scale may in due time thereafter be turned, until the larger reimbursements are restored to the treasury. Even if we accept the extreme possibility—that we shall expend the maximum and no return will ever be made, which is to confess our inability to establish an American merchant marine—the expenditure would be vastly preferable to the present unfortunate situation, with our dependence on our competitors for the delivery of our products. Moreover, the cost for the entire year would be little more than the deficit heretofore encountered in two months during the experiment of the government sponsoring the lines and guaranteeing the cost of their operation.

Will Get Government Out

"The proposed plan will supersede all postal subventions, postal compensations, and extra compensations, excepting parcel-post freights, all of which combined are fast growing to approximately five millions annually. It will ultimately take the government out of a business which has been, and is now, excessively costly and wasteful and involving a loss in excess of the highest subsidy proposed. It will bring to shipping again that individual initiative which is the very soul of successful enterprise. It should enable the government to liquidate its vast fleet to the highest possible advantage.

"The making of a successful American merchant marine, which must face the stiffest possible competition by the fleets of the maritime nations, requires something more than the direct aid to which I have alluded. The direct aid proposed, even though it ultimately runs to $30,000,000 annually, is insufficient alone to offset the advantages of competing fleets. There are more than wage costs, and working conditions and the higher costs of rationing, which no considerable American sentiment will consent to have lowered to competing standards.

"The men who sail the seas under our flag must be permitted to stand erect in the fullness of American opportunity. There is the higher cost of construction, the larger investment, the higher cost of insurance outlay, even though the rate is the same. There are higher interest charges. Our problems in shipping are very much the same as are those of our industries ashore, and we should be as zealous in promoting the one as we are in protecting the other. We may and must aid indirectly as well as directly.

"We need a favoring spirit, an awakened American pride, and an avowed American determination that we shall become, in the main, the carriers of our own commerce, in spite of all competition and all discouragements. With direct and indirect aid, I bring to you a definite program. Those who oppose it ought, in all fairness, to propose an acceptable alternative. There can be no dispute about the end at which we are aiming.

"Of the indirect aids there are many, practically all without draft upon the public treasury, and yet all highly helpful in promoting American shipping.

"It is a simple thing—seemingly it ought not require the action of congress—but American officials traveling on government missions at government expense ought to travel on American ships, assuming that they afford suitable accommodations. If they do not afford the requisite accommodation on the main routes of world travel, the argument that we should upbuild is strongly emphasized.

"I think we should discontinue, so far as practical, the transport services in the army and navy, and make our merchant and passenger ships the agents of service in peace as well as war.

Railroads Can Help

"We should make insurance available at no greater cost than is afforded the ships under competing flags, and we can and will make effective the spirit of section 28 of the Jones act of 1920, providing for preferential rail and steamship rates on through shipments on American vessels. American railways must be brought into co-operation with American steamship lines. It is not in accord with either security or sound business practice to have our railways furthering the interests of foreign shipping lines, when the concord of American activities makes for common American good fortune.

"Contemplating the competition to be met, there ought to be an amendment to the interstate commerce act which will permit railway systems to own and operate steamship lines engaged in other than coastwise trade. There is measureless advantage in the longer shipments where rail and water transportation are co-ordinated, not alone in the service but in the solicitation of cargoes which ever attends an expanding commerce.

"We may further extend our long-established protection to our coastwise trade, which is quite in harmony with the policy of most maritime powers. There is authority now to include the Philippines in our coastwise trade, and we need only the establishment of proper facilities to justify the inclusion of our commerce with the islands in

our coastwise provisions. The freedom of our continental markets is well worth such a favoring policy to American ships, whenever the facilities are suited to meet all requirements.

Aid in Construction

"Other indirect aids will be found in the requirements that immigration shall join wherever it is found to be practical in aiding the merchant marine of our flag under which citizenship is to be sought, and in the establishment of the merchant-marine naval reserve. The remission of a proportion of income taxes is wholly compatible when the shipping enterprise is of direct government concern, provided that such remission is applied to the cost of new ship construction.

"Congress has already provided for a loan fund to encourage construction. It might well be made applicable to some special requirements in reconditioning.

"It is also worth our consideration that, in view of suspended naval construction, the continued building of merchant ships is the one guaranty of a maintained shipbuilding industry, without which no nation may hope to hold a high place in the world of commerce or be assured of adequate defense.

"A very effective indirect aid, a substitute for a discriminating duty which shall inure to the benefit of the American shipper will be found in the proposed deduction on incomes, amounting to 5 per cent centum of the freight paid on cargoes carried in American bottoms. The benefits can have no geographical restrictions, and it offers its advantages to American exporters as well as those who engage in import trade.

"Our existing ships should be sold at prices prevailing in the world market. I am not unmindful of the hesitancy to sacrifice the values to current price levels. We constructed at the top cost of war when necessity impelled, when the building resources of many nations were drawn upon to the limit to meet a great emergency. If there had come no depression, a return to approximate normal cost would have been inevitable. But the great slump in shipping has sent tonnage prices to the other extreme, not for America alone, but throughout the world.

"If we held our ships to await the recovery we should only make more difficult our response to beckoning opportunity. One of the outstanding barriers to general readjustment is the tendency to await more favorable price conditions. In the widest view, the nation will ultimately profit by selling now. We may end our losses in an enterprise for which we are not equipped, and which no other government has successfully undertaken, and the low prices at which we must sell today will make a lower actual investment with which we deal in promoting permanent service.

"If I were not deeply concerned with the upbuilding of our merchant marine, I should nevertheless strongly urge congress to facilitate the disposal of the vast tonnage acquired or constructed in the Great War emergency. The experiment we have made has been very costly. Much has been learned, to be sure, but the outstanding lesson is that the government can not profitably manage our merchant shipping. The most fortunate changes in the personnel of management would still leave us struggling with a policy fundamentally wrong and practically impossible.

"Having failed at such enormous cost, I bring you the proposal which contemplates the return to individual initiative and private enterprise, aided to a conservative success, wherein, we are safeguarded against the promotion of private greed, and do not discourage the hope of profitable investment, which underlies all successful endeavor.

Shipping Alone Neglected

"We have voiced our concern for the good fortunes of agriculture, and it is right that we should. We have long proclaimed our interest in manufacturing, which is thoroughly sound, and helped to make us what we are. In the evolution of railway transportation we have revealed the vital relationship of our rail transportation to both agriculture and commerce. We have been expending for many years large sums for deepened channels and better harbors and improved inland waterways, and much of it has found abundant return in enlarged commerce. But we have ignored our merchant marine. The World war revealed our weakness, our unpreparedness for defense in war, our unreadiness for self-reliance in peace.

"It would seem as though transpiring events were combining to admonish us not to fail now to reassert ourselves. In the romantic days of wooden hulls and whitened sails and the sturdiest men of the sea we outsailed the world, and carried our own cargoes, revealed our flag to the marts of the world.

"Up to the World war we were a debtor nation. Our obligations were held largely by the maritime powers. Apart from the advantages in carrying our commerce, they sought our shipments for the balances due to them. There is a different condition now. They are concerned with shipments to us, but not so interested in our shipments to them. It is our high purpose to continue our exchanges, both buying and selling, but we shall be surer of our selling, notably our foodstuffs, if we maintain facilities for their transportation.

Effect of Disarmament

"Contemporaneous with the awakening, we have the proposal to carry our ocean-going facilities to the great 'unsalted seas,' which shall place the farms of the upper Mississippi valley on a market way to the marts of the Old World. We should fail to adjust our vision to the possibilities if we halted in making for American eminence on the ocean highways now awaiting our return.

"We have recently joined the great naval powers in a program which not only puts an end to costly competition in naval armament and reduces the naval forces of the world, but adds to the confidence in maintained peace. The relativity of strength among the powers would be wholly one of disappointing theory, if ours is to be a merchant marine inadequate for the future. I do not care to stress it as a means of defense. The war and our enforced outlay have already stressed that point.

"The merchant marine is universally recognized as the second line of naval defense. It is indispensable in the time of great national emergency. It is commendable to upbuild and maintain, because it is the highest agency of peace and amity, and bears no threat and incites no suspicion. And yet it is a supreme assurance, without which we should be unmindful of our safety and unheeding of our need to continued growth and maintained influence.

"I am thinking of the merchant marine of peace. Commerce is inseparable from progress and attainment. Commerce and its handmaidens have wrought the greater intimacy among nations, which calls for understandings and guaranties of peace. However we work it out, whatever our adjustments are to promote international trade, it is inevitable that the hundred millions here, outstanding in genius and unrivaled in industry and incalculable in their resources, must be conspicuous in the world's exchanges. We can not hope to compete unless we carry, and our concord and our influence are sure to be measured by that unfailing standard which is found in a nation's merchant marine.

Officers of the Great Lakes Towing Co., recently were re-elected for the ensuing year.

Farmers Not Opposed to Subsidy

Midwest Changes Views on Plan To Foster Merchant Marine, Senator Capper Says—Farm Bloc Leader Explains Attitude

WHERE will be centered the opposition in congress to the administration's ship subsidy program? That is a question to which MARINE REVIEW sought to find an answer, and in seeking made a careful canvass of the situation in Washington.

Subsidies have been proposed in the past and have, in the past, been defeated in congress. Upon prior occasions defeat of subsidies was attributed directly to the lack of support on the part of the vast farming regions of the Middle West, the farmer vote of which effectively controlled a majority in congress. The natural surmise is that opposition to the new subsidy proposal would be discovered in the same quarter. The present congress is at the mercy of an agricultural bloc, a group of members from agricultural districts banded together for the purpose of enforcing the desires of the farmers upon the government. That bloc is effectively organized and from the head of it, disclosed in the person of Senator Arthur Capper of Kansas, direct information was sought. "Out in our country we have always opposed subsidies," declared Senator Capper punctuating his remarks with his sunburned fingers. Then with the statesmanlike caution which is the usual cloak of the typical Washingtonian these days he added: "That is, we farmers have always opposed subsidies during normal times." Normal times according to Senator Capper were those times before the war when we were protecting our wheat from the cheaper wheat of Canada and still cheaper wheat of Argentina. In those days wheat was cheap because Europe obtained a great share of her requirements from Russia. Today Europe is looking elsewhere for grain. That grain might be purchased in the United States but dollars are selling for too much. Canadian money is cheaper and Argentine money is still cheaper. That means that both Canadian wheat and Argentine wheat is cheaper than the wheat grown in the United States. The result is that American wheat is left in the bins. These are not normal times. The farmers of the Middle West are beginning to realize that an American merchant marine after all might be a good thing.

"We have a new situation now," Senator Capper proceeded to point out. "We are confronted with unusual conditions. I don't know but that it requires a new method of treatment. While I have not as yet been able to study the details of the subsidy proposal, still I would greatly hesitate declaring that I would oppose the remedy suggested by President Harding. Among the "unusual conditions" and involved in the "new situation" which Senator Capper had in mind was the proposal, which President Harding has joined up with subsidy, of approving the digging of the enlarged St. Lawrence canal, making that canal large enough to accommodate seagoing ships. The farming districts of the Middle West are intensely interested in this proposed undertaking and are willing to sacrifice some of the older and deep-seated prejudices in order to obtain that canal. The middle western farmer dreams confidently of the day when he can load his grain and other farm products at one of the lake ports and from there have it carried direct to Europe without transfer. He believes that when

© Harris & Ewing

SENATOR CAPPER, HEAD OF SENATE FARM BLOC, SEES MERIT IN THE HARDING SUBSIDY PLAN

that is possible he will be able to sell more grain in Europe and to obtain a better price for it.

The middle western farmer objects to the transfer of his grain at Buffalo and again the transfer at New York or one of the other Atlantic ports. He feels that at each transfer the local handler takes a "rake-off," and thus cripples the farmer's marketing ability. If the middle western farmer is to be assured the St. Lawrence seagoing canal he is willing to support the ship subsidy measure in which all the coast peoples appear so desperately interested. That, in a measure, is the way those middle western votors look at the thing and that is how Senator Capper described it.

Senator Capper, as the inheritor of the whip of Senator Kenyon, naturally is raised to the rank as head of the powerful agricultural bloc. Therefore, what he has to say in this instance on the ship subsidy measure is most pertinent. If there is to be any opposition to the program it would certainly be started by the agricultural bloc. While Senator Capper made it clear enough that he has not made up his mind on the subsidy proposal, he was careful to indicate that the subsidy program contains some things which he will be forced to favor heartily.

Proposed Plan Has Merit

"The government has a white elephant on its hands," continued the senator. "Now the question is whether the enactment of a subsidy to encourage the private ownership of vessels will prove a means of unloading that white elephant from the government. President Harding made a very strong and solid plea for the program which has been placed before us. That is quite a different thing from any other subsidy proposal which has ever been placed before congress."

All in all the interview with Senator Capper conclusively disproved the supposition that the agricultural bloc in congress intends to block the subsidy program. The bloc will take no stand whatsoever in the matter. Probably some individual members will advocate the postponement of the enactment of the subsidy measure until after the congressional elections next fall. Politically, it is considered wisest, by some of even the staunchest supporters of the administration, to introduce the subsidy measure and let the party record stand at that until after the elections. After the elections the administration can with more assurance press for the enactment of the law without jeopardizing the party standing of any member.

But Senator Capper was explicit in stating that he was not among those who are advocating the postponement of action until after the next elections. He merely called attention to that situation in a desire to set forth another phase of the problem as it was being discussed around Washington. At the time he gave assurance that there is no organized opposition in congress to the subsidy program. There has not been time to start an organized opposition. At the White House President Harding has been similarly advised. The Executive has been led to believe that congress is solidly behind the subsidy program, that the country is behind it and that there is little likelihood of organized opposition.

Defeat of the soldier bonus measure will not cause any difference. If President Harding is going to assume responsibility for defeat of the bonus, those in congress now advocating the bonus are not going to hold a grudge against the President and they have no intention of working that grudge off by opposing the ship subsidy program.

Democratic opposition naturally is expected to develop, but the proponents of the subsidy are prepared to confound those opponents early. The Democrats are to be charged with responsibility of building the government owned merchant marine. They are to be charged with saddling the government with the state fleet which is costing in excess of $60,000,000 a year to keep one fourth of its tonnage in operation. Certainly a subsidy that will cost as much as $30,000,000 annually, which is considered the maximum amount it will cost in any one year, would be much preferable to the waste from government operation, it is pointed out.

The three Democratic members of the shipping board have addressed the Democratic members of the two committees of congress requesting that the subsidy program be considered as a nonpartisan measure. They declared that the whole program as put up to congress by President Harding was unanimously approved by the members of the shipping board. The Democratic commissioners, especially approved the indirect subsidy proposals.

That letter of the three Democratic commissioners was the first gun fired in the congressional fight. The shipping board is loaded with ammunition with which it is hoped to be able to rush the subsidy measure through congress. This ammunition may not all be as effective as the letter from the Democratic commissioners to their fellow party members in congress, nor as effective as the St. Lawrence canal promise has been on the agricultural bloc, but that is a matter which must be left to developments.

Legion Urges Americans Use Own Ships

Endorsement by the national executive committee of the American Legion of the shipping board's advertising campaign to bring to the attention of the American people the excellent facilities offered by government vessels operating on the seven seas, for business and pleasure travel, has come in the form of resolutions recently adopted by the veterans' organization at Indianapolis. In introducing the resolutions the committee took cognizance that the officers of shipping board vessels are reserve officers of the navy, and that the advertising system adopted by the board in striving to upbuild the American merchant marine should be appreciated by the public, who should travel at all times on American ships, whenever available. The resolutions follow:

"Whereas, the United States, by means of its merchant marine, operates and maintains world wide shipping service; and

"Whereas, it is vital to a sound national policy at all times that our shipping interests be fostered and developed; now, therefore, be it

"Resolved, by the national executive committee of the American Legion, that all American citizens and interests, whenever possible, as a patriotic duty, use American owned and operated steamship lines when shipping or traveling to and from foreign countries."

Shipowners Study Merits of St. Lawrence Canal

Merits of the proposed St. Lawrence ship canal are to be reported to the American Steamship Owners association by a special committee named by H. H. Raymond, president of the association. The committee is giving particular attention to whether grain can be shipped as cheaply through the canal as by the routes now taken. It was pointed out that while American shipping men likely would be the losers if the project goes through, they want to make a thorough study of the plan in order to make a definite stand on the question.

Frank C. Munson, president of the Munson line, is chairman of the committee, the other members of which are E. J. Barber, president of the Barber line; W. A. Thompson Jr., of the Texas Steamship Co. and David T. Warden of the marine department of the Tide Water Oil Co.

Travel week will be celebrated March 25 to April 1 coincident with the first international travel exposition which is to be held in the Grand Central palace, New York. This exposition is held under the direction of the Travel Club of America.

All Nations Have Tried Subsidy

Maritime Countries Have Always Granted State Aid—What Subsidy Has Done in Earlier Trials

BY V. G. IDEN

ALL the large countries of the world, with the possible exception of China, grant aid to their merchant marines. This is accomplished in sundry ways and the aid takes on different names. A subsidy in the sense it is used in the maritime world is a bounty, and a subvention is aid extended in the form of a grant but is contingent upon the performance of some particular function. Indirect subsidies now are granted by the United States, but this country abandoned the system of direct subsidies in 1878.

Statistics of overseas shipping show that the American documented fleet began to decline rapidly after that date.

Foreign Trade Brings Power

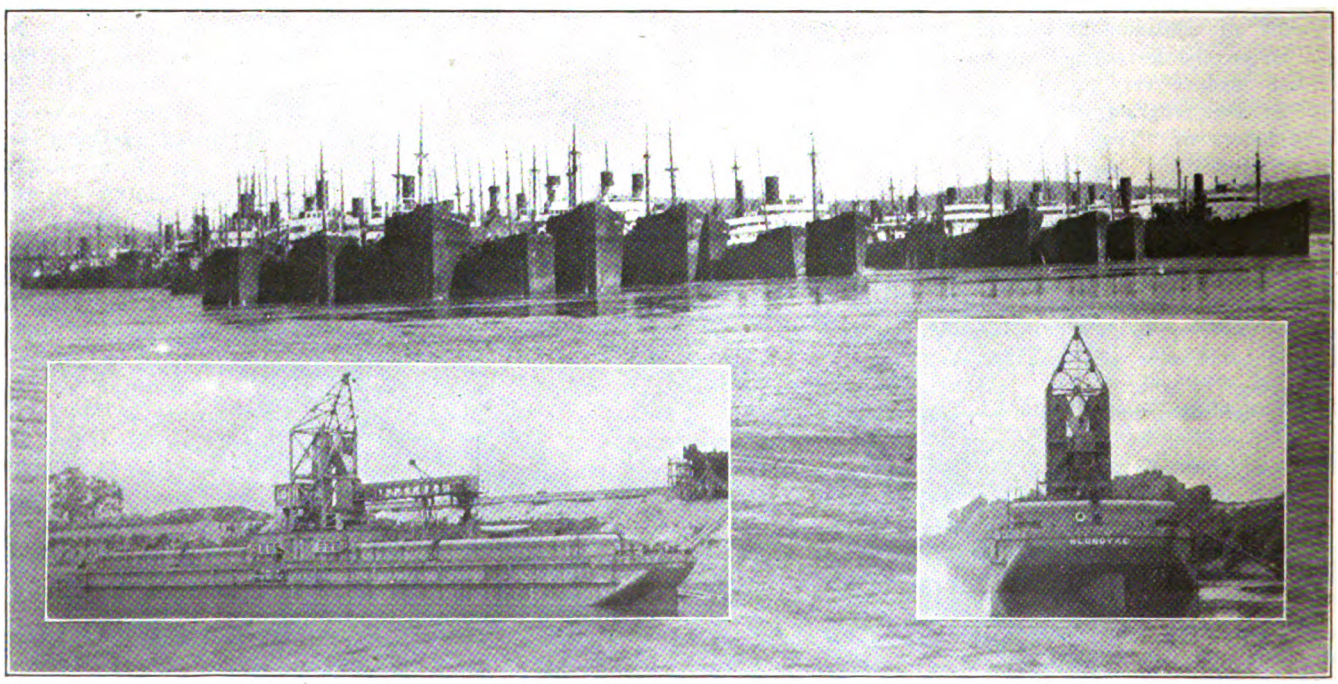
Students of history have all been impressed with the fact the most powerful civilized nation in the world is that nation which possesses the strongest merchant fleet. This was true of Phoenicia. It was true of Greece. So it was of Rome, and later Spain, Holland and England. Today possessed of a fleet of over 20,000,000 tons, or about one-third of the merchant tonnage of the world, England is decidedly the strongest maritime nation. England's position in that regard once was threatened by the United States. Being the most powerful maritime nation it was but natural that all merchant marine protective acts, inclusive of subsidy enactments, of other nations have been predicated upon a necessity to protect the national marine against the shipping supremacy of England.

These historical facts should be considered before any intimate study is made of subsidies in the United States. England wrung her supremacy on the high seas through the defeat of the Spanish Armada, and then by careful protection of her merchant fleets ran the Dutch ships out of the Atlantic fisheries. At that time the American colonists were building ships and engaging in the same fishing trade off the banks of Newfoundland. When England discovered her own colonies were taking the lion's share of the trade, she began a system of reprisals and harsh restrictive measures. One of these legislative acts was to forbid the American colonists to take their spice and tea from the Orient in their own ships. That trade had to move in British ships. When England attempted to enforce that act, the well known Boston tea party was staged and shortly thereafter the Revolutionary war began.

England's restrictive navigation acts were commonly known as the Cromwell laws. They reserved the colonial trade to British ships and forbade foreign vessels engaging in the English coastwise trade. Those restrictions merely spurred the Americans to greater endeavor and it was highly profitable for them to break the English navigation laws. The enormous profits made by the Americans in their sundry shipping ventures resulted in the building of the finest and fleetest ships afloat. The competitive nature of the engagements of many of these ships placed a premium upon speed and that demand caused not only the building of ships of wonderful design but the training of sailors of unexcelled skill.

England Reverses Policy

That experience taught England the fallacy of her method of protection to her shipping. She discovered that protection which amounted to a restriction of competition resulted in inadequate services and inefficient lines. Therefore, in 1850 England repealed her navigation acts and all her trades were opened



SOME IDLE SHIPS—AND A BUSY ONE

One hundred and two steel vessels owned by the United States shipping board and valued at approximately $50,000,000 are anchored in the Hudson river near West Point, N. Y., awaiting a revival of commerce or sale to private operators. All the vessels were built during the war, and some have never put to sea except for their trials. The insets in the photograph show the port and stern views of an all-steel ore barge built by the Marietta Mfg. Co., Point Pleasant, W. Va., and just shipped knocked down to South America

to all ships of the world and her shipowners were permitted to buy ships in any country of the world and place them under the British flag. Promptly the British owners began buying up the better of the American ships whenever it was possible. The beginning of the Civil war facilitated that purchasing movement and many American owners sold out their ships in order not to suffer a complete loss on them as prizes of war.

The United States restricted her coastwise trade to vessels built in American shipyards and registered under the American flag by the act of March 1, 1817, and that law is still on the statute books. Prior to that, on July 20, 1789, a law was enacted levying much higher tonnage taxes on the entrance of foreign ships which had the effect of keeping out foreign competition.

The following table will give a comprehensive idea of the rapidity of growth of the American coastwise shipping tonnage:

Year	Tons of ships
1850	1,899,555
1855	2,615,731
1860	2,752,938
1865	3,454,093
1870	2,677,940
1875	3,238,390
1880	2,649,353
1885	2,896,573
1890	3,391,884
1895	3,705,104
1900	4,239,569
1905	5,391,802
1910	6,593,728
1911	6,640,820
1912	6,652,686
1913	6,726,340
1914	6,718,974
1915	6,384,725
1916	6,147,046
1917	6,296,288
1918	6,192,893
1919	6,108,811
1920	6,265,308
1921	7,072,286

The reservation of the coastwise trade to United States ships is probably the single remaining outstanding example of this method of protection to shipping left in the world. The principle was once one of the favorites. Naturally the American coastwise trade is probably the most attractive of any coastwise trade of the world due to the length of the coastline and the great volume of trade which is now growing up intercoastal since the opening of the Panama canal.

Try Many Forms of Aid

Other forms of shipping protection have since been attempted and for the most part they have all been tried out in the American law, first with success, and then with failure. For instance, less than 10 years ago, in the Panama canal act, tariff duties on materials going into shipbuilding were removed and documentation under the American flag for overseas trade of ships built abroad when not over five years old, was permitted. The Austrian, British, Russian and Belgian governments established loans for particular steamship lines or for shipbuilding. There have been instances of the return of port dues or the free use of canals in order to aid the merchant shipping of a particular country, but these have not been extensive and nothing of great consequence has resulted.

The most popular form of subsidy has been in the form of navigation bounties and ocean mail pay. These have been considered the most effective and have been adopted in some one of their various forms by all the maritime nations of the world.

The commissioner of navigation of the United States in his annual report to the secretary of commerce and labor in 1909, estimated that the total of all subsidies paid in 1908 amounted to $46,907,220. France was the payer of the largest subsidies. The commissioner tabulated the French subsidies as follows:

Mail subsidies (1908)	$5,217,037
Navigation bounties (1908)	6,079,500
Shipbuilding bounties (1908)	2,007,200
Fisheries bounties	120,000
Total subventions	$13,423,737

In the same report, the commissioner tabulated England's subsidies as follows:

Subsidies and mail pay (1908)	$3,320,454
Cunard Admiralty subvention (1909)	729,000
Royal Naval Reserves (1909-10)	1,783,620
Canadian subsidies and mail pay (1910)	1,581,800
Canadian fisheries bounties (1909)	160,000
Australian and New Zealand subsidies	1,263,600
Cape Colony subsidy (1909)	656,910
Jamaica subsidy (1909)	194,000
Total subventions	$9,689,384

The amount of these subsidies during any one year or period of years is difficult to estimate, although it is generally understood they have increased considerably from year to year. It is understood that from 1881 to 1893, France expended $23,687,000, and from 1893 to 1901 about $29,148,000 in both construction and navigation bounties. It was during that period that the French realized little from the subsidy efforts as the French merchant marine actually decreased. In 1902, France adopted a new bounty law which brought about a decided change, and that act has since been superseded by the laws of 1906 and 1912.

Germany not only granted mail subsidies but that country had national investments in shipping. Germany carried on an aggressive overseas trade campaign for a period of about 40 years which greatly assisted in the development of the merchant marine. The establishment of foreign trade connections was supplemented by the creation of foreign branch banks. Colonization aided these movements and with the financial backing of the crown, the German lines prospered. So great was the power of the German lines that they practically forced their way into the leading steamship conferences and brought about the perfection of the conference whereby rates were maintained and traffic divided.

The steamship conference became such a powerful agency to keep the strong lines in power and to fight off new competition that the United States sought to break the force of the transatlantic conference by a suit under the antitrust law. This case did not reach the Supreme Court until after the World war had started and then it was dismissed.

Subsidies Universally Used

All the leading maritime nations of the world have a system of subsidies in some form. The French is probably the most highly subsidized marine in the world, although England has been able to develop a larger merchant marine through a judicious use of state aid. England has subsidized certain particular lines and has interested itself in the development of more advanced types of ships. The United States, on the other hand, has shifted about from one policy to another and in the meantime the navigation statutes have been burdened with discriminating admeasurement laws, seamen's acts, and sundry other measures. So numerous and conflicting are the navigation statutes of the United States that not all of the laws actually are enforced. There has been no codification and it would be possible through enforcement of the statutes, according to the testimony of shipping experts, to drive all the merchant fleets off the seas.

Before going into any of the detail as to America's experimentation with subsidies, the growth, decline and regrowth of the overseas merchant marine should be examined. This is distinct and separate from the coastwise fleet. American tonnage in foreign trade has totaled as follows:

Year	Tons of ships
1850	1,585,711
1855	2,535,136
1860	2,546,237
1865	1,602,583
1870	1,516,800
1875	1,553,827
1880	1,352,810
1885	1,287,999
1890	946,695
1895	838,187
1900	826,694
1905	954,513
1910	791,825
1911	872,671
1912	932,101
1913	1,027,776
1914	1,076,152
1915	1,871,543
1916	2,191,715

	Government owned	Privately owned
1917	76,160	3,564,160
1918	939,058	3,813,325
1919	3,827,203	3,927,651
1920	6,903,128	4,375,613
1921	7,993,771	5,240,630

Today America's privately owned overseas shipping is approximately as

large as Germany's was before the war. Government owned tonnage is segregated as that fleet is manifestly deserving of special consideration. Since the establishment of the American government, the merchant fleet has gone through various vicissitudes as the fluctuation in the annual shipping totals will show, and each of these fluctuations was the result of some legislative policy adopted by the federal government of the United States.

Adopt Direct Subsidies

Until 1850, when England repealed her restrictive navigation acts, the world was following a system of restrictions in order to encourage the merchant marines. After 1850, however, the policy of government aid, or subsidies, began to grow up. Until the Civil war the system of subsidies had not been given a sufficient trial and its effect had not been felt. But it was prior to the Civil war that the United States embarked upon a system of subsidies. The law of March 3, 1845, authorized the postmaster general to contract with American shipowners for periods of from 4 to 10 years for the transportation of mails (*a*) between ports of the United States and any foreign ports not less than 3000 miles distant; (*b*) to any of the West India islands or islands in the Gulf of Mexico; and (*c*) between ports of the United States along the coast. The object of that law was to enable American ships to compete with the Cunard line which had been heavily subsidized by England.

In 1847, a 5-year contract for services between New York and Bremen and New York and Havre was entered into with the Ocean Steam Navigation Co. This contract called for the payment of $100,000 a year for every ship making a round voyage between New York and Bremen, via Cowes, once in two months, and a payment of $75,000 a year for every ship operating between New York and Havre, via Cowes. The service was started on June 1, 1847, but regular sailings were not instituted until 1851. In 1852, the contract was extended to 1857 and Southampton was substituted for Cowes as the British port of call. With the abandonment of the policy of mail subventions in 1858, the New York-Bremen service was discontinued, but the New York-Havre line continued operations until 1861, when its steamers were chartered by the government.

Record of Collins Line

The most important subsidized line, however, was that started by E. K. Collins providing a semimonthly service between New York and Liverpool during the summer months and a monthly service during the winter. The government paid this line $385,000 for 20 voyages a year. This line, known in its day as the United States Mail Line steamers, started in 1850 and was highly successful. The steamers were the largest, most luxurious and the swiftest on the Atlantic in their day. England increased the Cunard subsidy in 1852 to £173,340 ($843,559) a year for 52 round trips, and the United States increased the subsidy to the Collins line to $853,000. In September, 1854, the Collins line lost one of its four ships. In 1856 congress reduced the subsidy, and that year the line suffered the loss of another of its ships. In 1858 the subsidy was entirely withdrawn, and in January, 1859, the line made its last sailing.

Three other subsidy contracts were made within the first period. In 1847, A. G. Sloo obtained a contract for a semimonthly service between New York and the isthmus of Panama with calls at Charleston and Savannah. Another contract was made to carry the mails from Panama, connecting with the Sloo line, to Astoria, Oreg. This was later assigned to the Pacific Mail Steamship Co. when that company was organized. The third contract was with M. C. Mordecai, Charleston, S. C., for a monthly service between Charleston and Havana.

The Civil war marked the end of the first experiment of the United States with mail subsidies, and ushered in a new era. From 1864 to 1877 was another period of experimentation with subsidies. By the act of May 28, 1864, a joint subsidy, $150,000 paid by the United States and $100,000 by Brazil, was enacted for the aid of a line running between Philadelphia and Rio de Janeiro. This line continued from 1865 to 1876.

In 1867, the Pacific Mail Steamship Co. began the operation of a monthly service between San Francisco and ports in China and Japan via Honolulu, under a 10-year contract approved by the law of Feb. 17, 1865. This subsidy amounted to $500,000 a year. Subsequently the subsidy was reduced and the line excused from making a call at Honolulu. Later a contract was made with the California, Oregon & Mexican line for operating the Hawaiian services, for which an annual subsidy of $75,000 was paid.

The outstanding feature of this era was that there was no general law providing for ship subsidies and no one executive of the government held responsible for its equitable application. In each instance congress enacted a law to cover the pay for every individual line. In 1872, the Pacific Mail Steamship Co. proposed the establishment of another monthly mail steamship line to China and Japan for an additional subvention of $500,000 a year. After much debate congress adopted the proposal and a contract to that effect was entered into. This contract, however, was abrogated by the act of March 3, 1875, after it was discovered that the law had been improperly passed and the company had failed to carry out its part of the agreement. The original contract of 1867 remained in force for the stipulated period of 10 years, but was not renewed.

Other subvention lines were proposed in 1872, one to Australia and another from New Orleans to Cuba, but neither secured the approval of congress. The corrupt lobby which was disclosed in the early 70's dealt subsidies a death blow in this country. Other so-called maritime aid measures have been enacted but none of them has had the effect of a subsidy.

Grant Mail Pay Aid

The third period was begun in 1891 with the enactment in that year of the mail pay law which has remained in force until the present day. This law permits the postmaster general to contract with American steamship lines for carrying the mails for a period of from 5 to 10 years. This law permits the payment of $4 a mile for carrying the mails on ships over 8000 tons in size and at least 20 knots in speed, and graded the pay down to 66 2/3 cents per mile for the carrying of mails on ships of 12 knots in speed and with a minimum gross tonnage of 1500 tons. Under this law, mail pay contracts were made with the American line to run between New York and Southampton; the Ocean Steamship Co. for a service between San Francisco and Sydney and between San Francisco and Tahiti, this latter being discontinued in 1912; the Ward line for a service between New York and Vera Cruz and between New York and Havana, this latter being discontinued in 1912; and the Red D line between New York and Puerto Cabello, Venezuela, and between New York and Maracaibo, Venezuela, and with the American Mail Steamship Co., for a service between Boston and Philadelphia and Jamaica, this being discontinued in 1913.

Subsidy Efforts Defeated

These mail contracts under the act of March 3, 1891, have not been especially attractive to the steamship companies and their surrender has frequently been entirely voluntary. On the other hand, the greater part of the cost of carrying the mails on the ocean has been in pay to foreign lines and others not beneficiaries of the special mail pay act. Sundry efforts were made in the meantime to enact a subsidy act but all were defeated. The most outstanding were the Hanna-Payne bill, in-

troduced in the senate on Dec. 19, 1898; the Frye bill introduced in the senate on Feb. 28, 1899; the Frye bill of Feb. 26, 1900; the Payne bill of March 31, 1900; and Frye bill of December, 1901.

All of these practically were one and the same bill. It was passed finally by the senate on March 17, 1902, but was ultimately defeated in the house of representatives. In anticipation of the enactment of that bill, nevertheless, a total of 17 transoceanic steamships were built or contracted for, according to the official findings reported by the commissioner of navigation. Failure to realize these anticipations resulted in considerable loss to American steamship owners. Of the six transatlantic steamers, the FINLAND, KROONLAND and SAMLAND were transferred to the Belgian flag, and the MISSOURIAN, VIRGINIAN and MASSACHUSETTS were placed in the coasting trade. Of the transpacific ships then built, in 1909 the SIERRA, SONOMA and VENTURA were laid up at San Francisco, the SHAWMUT and TREMONT were sold to the government for the Panama trade, and the DAKOTA was wrecked. The KOREA, SIBERIA, MONGOLIA, MANCHURIA and MINNESOTA were maintained in the transpacific trade until driven from it by further heavy navigation restrictions enacted by congress.

In 1904, congress created the merchant marine commission which made an extensive investigation into the low state to which American shipping had been brought. This commission filed a report on Jan. 4, 1905, and out of that came the Gallinger bill of Dec. 4, 1905. Senator Gallinger, a staunch advocate of subsidies and state aid to shipping, introduced his bill again on Dec. 4, 1907, and on Feb. 23, 1910. His efforts, however, were in vain.

Until 1912, the overseas tonnage under the American flag showed a constant decline. It was in that year that the first increase was noted, but this was most likely due to an anticipated opening of the Panama canal and to the fact that steamship owners were beginning to prepare themselves to take advantage of that waterway. The increase from 1911 until 1914 in American overseas shipping was at a very slow rate which the war accelerated.

Resurfacing Restores Concrete Drydock

COMPLETE resurfacing of the concrete drydock of the Chicago Shipbuilding Co. at 101st street and Calumet river Chicago has restored that repair unit to its full usefulness.

FIG. 1—READY TO RESTORE BIG CHICAGO DRYDOCK

The dock built in 1915, is 705 feet long, 88 feet wide at the bottom, 106 feet wide at the top and 29 feet deep. Defects in the surface of the concrete appeared in time and by summer last year the dock had begun to disintegrate badly.

After an investigation had been made of the dock and of the problem of restoring it without complete rebuilding, contract was awarded to the Cement-Gun Construction Co., Chicago, and the repair was started at once.

The entire surface both of the walls and of the floor was gone over thoroughly, first with ordinary picks where the concrete was soft and in some cases it could be removed in large slabs and flakes. This was followed up with pneumatic chipping hammers by means of which the entire concrete surface was thoroughly cleaned where the concrete was soft and scored where the concrete was sound.

Steps of a stairway leading down into the dock, were so bad that when cleaned there were no steps left. The workmen left the stairs to the last, in order that they might use them for getting in and out of the dock.

Holes of 1¼ inches were drilled all over the walls and floor approximately on 30-inch centers. Jackhammers were used and the holes were drilled about 6 inches deep. Into these holes railroad spikes were secured by grouting. To these spikes horizontal steel rods were secured, and to these was fastened

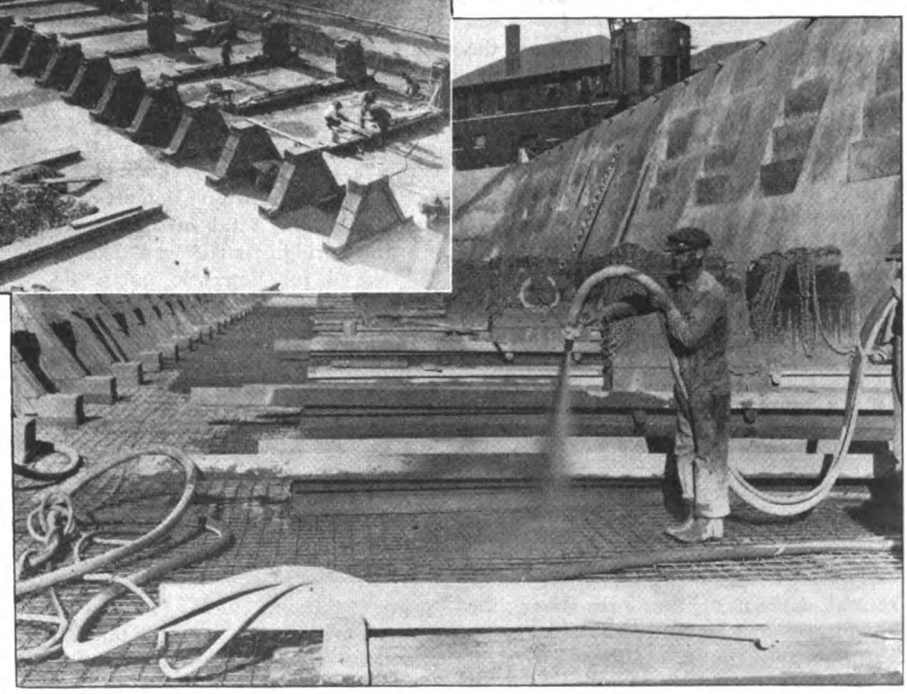


FIG. 2—APPLYING COATING TO FLOOR OF DOCK WITH COMPLETED WALL AT RIGHT

a reinforcing fabric consisting of a heavy steel wire mesh. This wire mesh extended over the top of the wall and about a foot down on the outside.

The company's special concrete coating was then shot in place, beginning one foot down on the outside of the wall, extending over the top, heavily reinforced down the wall and across the floor in one continuous sheet.

About 400 lineal feet of the drydock was scaffolded at one time, and this was taken down and moved as the work proceeded. A locomotive crane was available on both sides and good use was made of it in handling the scaffold which was made in 6-foot sections. The locomotive crane carried them to place and dropped them into position. The sections of scaffold were placed 6 feet apart, so that the operating plank would span from section to section, and the sections were lightly tied together with horizontal stringers, consisting of 1-inch boards.

As it was desired to push the work vigorously and so far as possible prevent the loss of work in case of rains, the scaffold was so built that in case of rain, tarpaulins could be thrown over the top and extend down the sides in such a way as to protect the new work against the washing action of the rain. In this way work could be carried on right up to the point when the rain became so heavy as to drive the men off the job. Little time was lost, and practically none of the fresh work was washed off by bad weather.

Two mixers were used, both of them batch mixers specially adjusted for the semidry mix used in cement guns. These were placed on edge of the wall as shown in Fig. 1. After screening, the mix was delivered by means of chutes to platforms on the floor of the dock, around each of which three cement guns were grouped. In this way, six cement guns were used continuously on the work. Fig. 2 shows the application of the coating to the floor. This also shows a portion of the wall as it appears when completed. Fig. 3 shows one of the nozzlemen at work applying the coating. This view shows the method of scaffolding and also the reinforcing rods, wire mesh and coating being applied.

This work was completed in about 50 days.

Capt. Elijah G. Davis, familiarly known as Capt. "Danger" Davis, senior retired captain of the Fall River line steamers, died recently at his home in South Swansea, Mass. Captain Davis was in the service of the Fall River line for 35 years.

Houston Becomes a Big Ocean Port

Houston, Tex., formerly an inland city, has amply demonstrated that it is no longer a deep water port in name only. In the fiscal year 1920-21, 272 steam vessels called at and cleared from the port. A total of 57 vessels entered in ballast, 69 carried bulk cargoes, and 2 general cargo, a total of 128. The number of vessels entered from domestic ports was 105. The total of vessels clearing for foreign ports was 144, while 85 cleared for domestic ports.

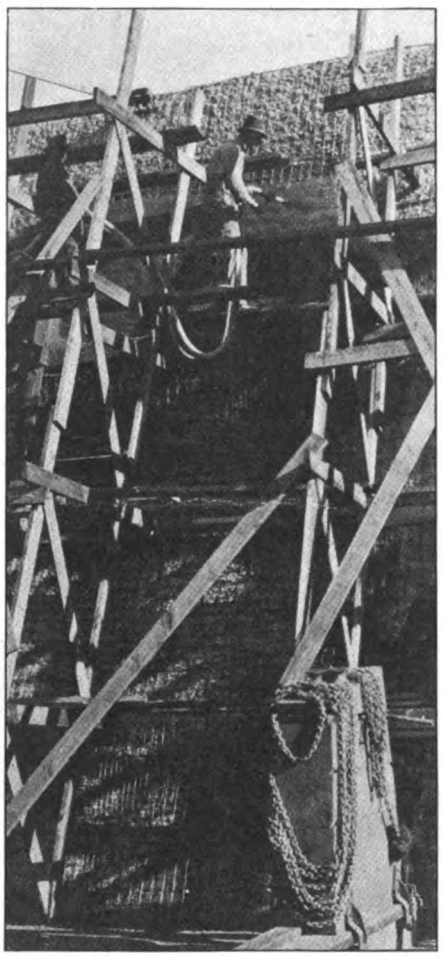


FIG. 3—HOW COATING WAS APPLIED

Exports amounted to $52,790,337, the greater part of which represents the value of cotton cargoes, while imports were valued at $1,277,328. The total number of bales of cotton exported was 423,056. Of this amount 251,835 bales were shipped during the first six months of the period. October was the banner month, with six cargoes totaling 63,482 bales. November was another large month with five cargoes totaling 61,255 bales. Large cargoes of gas oil and shipments of lubricants were made during the year, this business totaling $2,849,557. Shipments were principally to Europe. Lumber shipments reached $492,460. Large shipments of rice were made, principally to Porto Rico and Germany and England. Houston has made itself a deep-water port by a ship channel. This channel occupies a natural waterbed, formerly known as Buffalo Bayou. From the turning basin at Houston to the open gulf, the waterway is 54 miles long. The ruling depth is 25 feet. The bottom width of the channel is 100 feet from the turning basin to Morgans point, and 150 feet from Morgans point to the gulf waters, except in the vicinity of Red Fish reef, where the width is 250 feet, to allow freedom to the tide. The turning basin has a radius of 1100 feet, sufficient to take care of the largest vessels. At six points, the channel has been widened an additional 100 feet to facilitate the passage of large vessels.

The original contract, calling for a 25-foot channel, was let in 1912 and was completed in 1915. The cost of these improvements up to July 1920 was $18,491,363.34, divided equally between the national government and the city.

Practical work on further improvements of the channel are almost completed. This will give a ruling depth of 30 feet with a bottom width of 150 feet from Morgans point to Houston and 250 feet from the former point to the gulf. Curves in the channel will also be straightened.

A harbor belt railway with about 20 miles of track serves most of the industries on the south side of the channel from the turning basin to a point six miles down the channel. The line will be extended to Morgans point on the south side, involving about 18 more miles of construction. When this is done the railway will parallel the channel at an average distance of one-third of a mile and will serve all industries in the district. These plants will have deepwater at their front doors and at their back doors direct connection with the 18 railroads serving Houston.

A valuable adjunct to the Houston ship channel is the upper channel of Buffalo bayou, extending from the turning basin to the center of the wholesale district. Barges of light draft and lighters navigate this channel without difficulty. Numerous warehouses are located on the upper channel, and they ship direct by water to the turning basin of the ship channel. During 1918, approximately 500,000 tons of freight, valued at $14,000,000, were transported over this upper waterway. This tonnage does not include cotton shipments, which have always comprised an important phase of the channel's activities.

Shipyards Show More Activity

Contracts Are Placed for Several New Vessels and Inquiries Indicate Considerable Future Business

MORE shipbuilding contracts have been placed recently, or are about to be placed, than have appeared in the industry for several months. With additional repair and conversion contracts being received by shipbuilding and repair yard and with a further cut of 10 per cent in wages in the New York district, in order to realign the scale with adjacent districts, the outlook for future activity in ship construction and repair is regarded as decidedly wholesome.

Contract has been awarded to the Pusey & Jones Co., Wilmington, Del., for the construction of two passenger and freight ships for the Seaboard-Bay line, to ply between Baltimore, and Old Point Comfort and Norfolk, Va. Their total cost is to be nearly $2,000,000. These vessels will be steel, 330 feet long, 58 feet beam, 18.6 feet deep and of 2750 gross tons. They will be driven by 4-cylinder, triple expansion vertical engines geared to a single propeller. Coal will be burned, though provision may be made also for burning oil. Passenger accommodations will include 175 staterooms. A refrigerating plant will be installed to take care of perishable cargo.

Four steel cargo ships of 2450 net tons will be constructed by Fraser, Brace & Co., Montreal Canada, with which the New York Harbor Dry Dock Co. is associated. The contract was given by the George Hall Coal Co., Montreal, which plans to use the ships in the coastwise coal trade.

Will Build Passenger Ships

President Stibbens of the Merchants & Miners Transportation Co. has officially announced his company plans construction of two $1,500,000 passenger and freight vessels for the service between Baltimore and Savannah. They will be oil burning vessels about 350 feet long.

One of the most important developments of the month was the bid of the Sun Shipbuilding Co. for the construction of a 360-foot passenger vessel for the Inter-Island Steam Navigation Co., Honolulu, at a price of $1,027,000. This is to be a 17-knot boat to operate between Honolulu and Hilo. Fifteen yards are said to have filed bids, the Sun company's bid being the lowest.

The Old Dominion line is said to be inquiring for a number of passenger ships with which to resume services between New York and Norfolk. It is reported this company wants to obtain from two to four vessels of the type of the JEFFERSON and MADISON, but that it will be necessary to obtain credit for their building. The Alaska Steamship Co. also is understood to be in the market for a passenger boat of approximately 4000 tons capable of 15 knots.

Cox & Stevens, New York naval architects, have completed plans and specifications for the construction of a cable steamer to cost about $500,000. This will be 169 feet long and is understood to be for the Western Union Co. Conforming to plans developed by Cox & Stevens, the Newport News Shipbuilding & Dry Dock Co. is building the largest diesel driven yacht ever constructed in this country. It is to be known as the DOLPHIN and is intended for a western owner whose name is withheld. The boat will be 180 feet in length and will have a beam of 24 feet. She will have a speed of 16 knots.

Government Ships Needed

The army engineers have requested an appropriation of $4,500,000 of congress for the construction of six seagoing dredges for harbor and sandbar work. A contract has also been awarded for the construction of a 10,000-ton freighter at Port Arthur, Ont. Other work under way or in prospect include 10 steel oil barges awaiting award by the United States district engineer office at New York.

Theodore D. Wells, New York naval architect, is reported to be drafting plans for 15 freight vessels, equipped with diesel electric drive, to operate between New York and Chicago through the Welland and St. Lawrence river canals during the open season, and to operate between New York and the West Indies during the season the lakes are closed. It is said the ships will cost about $5,000,000. These vessels, it is said, are to be of a special type, being practically without superstructure, except that two masts for cargo handling will be installed of such design that they will rest on the decks while the ships are passing through the canals. They are to be 257 feet long, 42 feet broad and 18 feet deep. Two refrigerating holds will be provided, and the refrigerating machinery and all other auxiliaries will be driven from the main power plant with engines developing 1300 horsepower. The ships will be built for deep sea service, and will be rated by the American Bureau of Shipping.

The shipping board has let contracts with the Todd Shipyards Corp. for a partial conversion of the LONE STAR STATE and the PENINSULA STATE. Several other vessels of the United States Line are also to have extensive repairs made on the cabin accommodations this spring. A number of the tenders are now out. The United Fruit liners CARILLO and TIVIVES have been withdrawn from the Colombian service and are undergoing conversion to oil burners at the plant of the Robins Drydock & Repair Co., Brooklyn. Todd burners will be installed.

U. S. Program Near End

The Transmarine Co. of Newark is reported to have purchased five diesel engines from the New London Ship & Engine Co. and will install them on towboats for the New York barge canal service.

The government is definitely withdrawing from shipbuilding. With the delivery of the liner WESTERN WORLD to the Emergency Fleet corporation the latter part of April by the Sparrows Point yard of the Bethlehem Shipbuilding Corp., the government shipbuilding program finally will be brought to a conclusion. This is the only boat left to be delivered. A sistership, the PAN-AMERICA, was delivered to the Munson Steamship lines on Feb. 25 for operation in the South American trade. At the same time the shipping board announces that contracts have been entered with several shipbreakers to take 12 of the wooden ships off the market. The shipbreakers will pay the board $1000 each for the vessels and divide the profits realized on the breaking-up of each ship with the shipping board after the original $1000 has been realized on the salvage. The ships for breaking up go to the Chesapeake Construction & Engine Co., Washington; Henry A. Hitners Sons Co., Philadelphia; William J. Breen & Co., Boston; Charles J. Jording, Baltimore, and the Sales Corp., Richmond, Va. A month or so ago 10 other wooden ships were allocated to five different yards for breaking up under a similar arrangement, but the boats have not as yet been delivered to the breakers.

The effort to dispose of the uneconomical vessels, however, is having a wholesome effect upon the shipbuilding in-

dustry. The board has sold the wooden ship FORT SEWARD to Raeffaell Starita, Naples, Italy, and the ex-German cargo steamer RAJAH to the Rajah Steamship Co., New Orleans. At the same time some scheme of financial relief for the pioneer purchasers of shipping board tonnage is being worked out. It is presumed that an adjustment in value of the ships will be made bringing them nearer to the market value of today.

Marvin A. Neeland, president of the New York Shipbuilding Co., Camden, N. J., in his annual report to the company's stockholders, declares the number of new inquiries for ships, from both domestic and foreign sources, constitutes the bright spot in the market.

The shipping board has awarded contracts for reconditioning the passenger liners AMERICAN LEGION and SOUTHERN CROSS. The work will involve enlargement of oil carrying tanks and refrigerating equipment and extensive alterations to passenger and crew quarters. The Staten Island Shipbuilding Co. was low bidder at $150,000 for all work except the installation of additional refrigerating equipment, which will be done by the Shipley Construction Co. for $38,000. Both ships are in the South American service of the Munson line. They will be withdrawn in turn for 25 days.

More Repair Work for Pacific Plants

TODD DRY DOCKS, INC., Seattle, is docking the British steamship NARENTA, of the Royal Mail Steam Packet Co., which was seriously damaged by grounding on Sinclair island, between Bellingham and Seattle. Following a preliminary survey, the vessel's entire cargo was ordered discharged as she was leaking badly. The hull damage is believed to be extensive.

The same yard is doing repair and overhaul work on the coast guard fleet, the tenders UNALGA and SNOHOMISH having been at the plant. Todd Dry Docks, Inc. is also doing considerable docking and overhaul of sailing ships and other craft employed in the Alaskan fisheries, these vessels preparing for the coming season.

At the Tacoma, Wash., plant of the Todd Dry Dock & Construction Corp., between 1000 and 1200 men are employed on the three navy scout cruisers now approaching completion. The first will be ready for delivery late in the year and the other two will follow soon after.

Todd Dry Docks, Inc. recently bid for repairing the steamship BESSIE DOLLAR at Victoria, B. C. This firm has also bid on the construction of a 360-foot combination express passenger and freight steel steamer for the Inter-Island Navigation Co., Honolulu. Fifteen bids were submitted. They were found to be about 65 per cent higher, based on tonnage, than bids submitted in 1913. The lowest tender was that of the Sun Shipbuilding Co., Chester, Pa., $1,027,000, while the best bid submitted from the Pacific coast was $1,199,350 by the Bethlehem Shipbuilding Co., San Francisco. Specifications call for a single-screw steamer of 4500 tons gross with an average speed of 16½ knots.

Pacific coast shipowners are greatly interested in the reported sale of 75 wooden hulls, including 43 laid up at Lake Union, Seattle, to San Francisco interests on a lump sum bid of $125,000. According to the best information, the purchaser is really representing a number of Pacific coast ship operators. From the same source comes the report that the Pacific coast owners intend to take what hulls they can use in the coastwise business while the others are to be junked and thus removed from their present position of potential competition. These idle hulls have been more or less a source of anxiety because it was believed they might be used to beat rates down below present levels.

Stockholders in the Victoria Shipowners, Ltd., are trying to obtain an expression from Dominion government officials as to their policy toward this company. Originally Victoria Shipowners, Ltd., was organized on a semi-co-operative basis to construct wooden hulls. Some government assistance was given but the company had financial difficulties. Last summer, the Dominion government took over the three wooden barkentines then under construction and assumed control of the plant. The government advanced $700,000 on a $1,000,000 building program. The first vessel's cost exceeded the estimate and, as a result, work on the two remaining ships was suspended. Capt. M. D. Harbord, president of the yard, has gone to Ottawa to attempt a settlement.

The Wallace Shipbuilding Co., Vancouver, B. C., has been awarded the contract for installing an oil burning system in the steel steamer CATHAY of the Dollar Steamship Co. This vessel was built in China for the shipping board and with several others constructed at the same yard was recently purchased by Robert Dollar for trans-pacific service.

Reduced rates have been announced by San Francisco bay shipyards for the first time in 15 years. The Hanlon yards cut their prices 10 to 20 per cent and the Moore yards followed. The latter will overhaul about 20,000 tons of the Alaska Packers' fleet for the coming season.

The Admiral liner ADMIRAL FARRAGUT was the victim of a freak accident at Vancouver, B. C., where she is undergoing extensive repairs. The vessel was resting on the ways at the Wallace shipyards held by a chain which gave way during the night. The ADMIRAL FARRAGUT slipped down the ways and drifted about the harbor until she brought up aground. No one was present at the time and the big vessel was entirely out of control. When the men went to work at the yards in the morning they were surprised to find the FARRAGUT gone but a quick search disclosed her ashore a half mile across the bay. She remained fast for 24 hours but floated apparently undamaged.

Nearly 2000 tons of shipyard equipment, including steel bars, bolts, galvanized ship spikes and bolts have been purchased by a number of Puget sound junk men at a recent auction sale of material on hand at the Grays Harbor Motorship Corp., Aberdeen, Wash. This material is now being sold in small lots. The receiver for the Sloan shipyards is also selling machinery and equipment formerly used by these yards. The Emergency Fleet corporation at Tacoma is still selling surplus equipment consisting of boilers, tanks, pumps, valves and general marine supplies.

Sell 12 Naval Ships

Awards to the highest bidders for 12 obsolete naval vessels, for which bids were opened on Feb. 21, have been authorized by Secretary Denby. Thirty bids were received for vessels which included one collier, one monitor, one gunboat, three tugs, one power boat, one yacht and four subchasers.

In addition, the commander-in-chief of the United States Asiatic fleet recently reported that the U. S. S. MOHICAN was sold at the naval station, Cavite, P. I., to A. E. Haly, Manila. This old vessel until several months ago, acted as the receiving ship at Cavite. The price was $5500.

Following is the list of ships, their purchaser, and the sales price:

SEA ROVER, tug, navy yard, Mare Island, sold to R. W. Green, Pier 14, San Francisco, $23,700.

U. S. S. NERO, collier, navy yard,

Mare Island, Cal., sold to Philip C. Lowry, 621 Market street, San Francisco, $10,125.

GREEN DRAGON, power boat, first naval district (Boston), sold to George E. Clements & Son, 461 North Second street, Philadelphia, $655.

VERGANA, yacht, Mare Island navy yard, sold to Louis A. Fracchia, 5401 Carlton street, Oakland, Cal., $8000.

U. S. S. DOLPHIN, gunboat, first naval district, sold to Ammunition Products Corp, 1423 New York avenue, Washington, $10,810.

U. S. S. MONTEREY, old monitor, at Pearl Harbor, sold to Bercovich Co., First and Jackson street, Oakland, Cal., $3600.

BESSIE H. DANTZLER, tug, New Orleans, sold to Lester F. Alexander Co., 830-834 Maison Blanche Annex, New Orleans, $9250.

U. S. S. PASSAIC, tug, at New York navy yard, sold to John Kantzler & Son, Bay City, Mich., $1020.

Subchaser No. 257, at New York, sold to S. W. Ferguson, 1708 Eye street, Washington, $3500.

Subchaser No. 322, at New York, sold to Robert Stickney & Co., 149 Broadway, New York, $2640.

Subchaser No. 147, at Newport, R. I., sold to Robey Tank Works, 2500 South Robey street, Chicago, $1050.

Subchaser No. 439, in fifth naval district (Norfolk) sold to Overseas Trading Co., 82 Wall street, New York, $721.

Appoint Yard Receiver

The Standard Shipbuilding Corp., Shooters Island, Richmond, S. I., went into the hands of receivers March 7 after a petition in equity had been filed in the United States district court, Brooklyn, by James Howden & Co. Ltd., of Great Britain. The petitioners have claims of $8000 against the shipbuilding corporation. John J. Fitzgerald, Albert Conway and William A. Young were appointed as receivers. Mr. Conway denied that the corporation is bankrupt. Papers filed with the petition of the complaining creditor gave the liabilities of the corporation as over $2,000,000. The assets of the corporation according to Mr. Conway, are between $6,000,000 and $7,000,000.

Submit 15 Bids for Hawaiian Steamer

Fifteen shipbuilders submitted bids late in February to Pillsbury & Curtis, San Francisco, marine surveyors, for constructing an express, passenger and freight steamer for the Inter-Island Steam Navigation Co., Ltd., Honolulu, H. I., for use between the islands of the Hawaiian group. The steamer is to be 360 feet long, 4500 tons gross.

The Sun Shipbuilding Co., Chester, Pa., tendered the lowest bid, $1,027,000, the work to be completed in 285 days. The Newport News Shipbuilding & Drydock Co., Newport News, Va., submitted the next lowest bid, $1,100,000, construction to be completed in 285 days. The highest proposal was made by the Union Construction Co., San Francisco, which offered to complete the steamer in 300 days for $1,468,300.

Tenders for the new steamer were called for in San Francisco by James Kennedy, president of the Inter-Island corporation, who recently returned to Honolulu. The bids follow:

Firm	Days	Price
Merchants S. B. Co.	364	$1,151,489
Newport News S. B. & D. D. Co.	285	1,100,000
Sun S. B. Co.	285	1,027,000
New York S. B. Corp.	425	1,273,500
Wm. Cramp & Sons	365	1,340,000
Federal S. B. Co.	300	1,128,370
Todd D. D. & Construction Co.	245	1,350,000
Bath Iron Works, Ltd.	456	1,360,000
Bethlehem S. B. Corp.	305	1,115,000
Los Angeles S. B. & D. D. Co.	300	1,150,000
Union Construction Co.	300	1,468,300
Bethlehem S. B. Corp. (of San Francisco)	305	1,199,350
Moore S. B. Co. (of Oakland, Cal.)	No bid	
Staten Island S. B. Co.	365	1,275,000

Southern Companies Unite

Reorganization of the Doullut & Williams Co., Inc., New Orleans, engineer and general contractor, has been completed with the consolidation under that name of Doullut & Williams, Inc.; the Southern Lighterage & Wrecking Co., Inc., and the Shell Beach Land & Improvement Co., Inc. W. Horace Williams is president and general manager of the new company, Paul Doullut vice president and J. P. Ewin secretary-treasurer and managing engineer.

Mr. Williams and Mr. Ewin will manage the engineering department; steel and other construction will be under C. G. Cappel; municipal and highway work will be under R. E. Gosa; the wharf and dock department will be in charge of L. C. Smith; the electrical department under Frank T. Copp; the statistical department in charge of H. J. Lane; and the lighterage and wrecking department under A. T. Gomila.

The company, one of the largest and most complete in the south, has discontinued its shipbuilding plant.

Book Reviews

Ocean Shipping, by Erich W. Zimmermann; cloth, 691 pages, 5 x 7½ inches; published by Prentice-Hall Inc., and furnished by MARINE REVIEW for $5 net.

In this book, the author has attacked the problem of showing how the war-given American merchant fleet can best be turned into a national asset. To accomplish this task, he has enlisted references from many authorities, contributed much original material and evolved a product of genuine value. The entire business of transportation by water is thoroughly discussed, with particular relation to the American viewpoint.

The distinguishing note of the book is its emphasis on the interdependence of shipping and commerce. Shipping problems are properly understood only when placed against the background of ocean commerce. The text discusses ocean transportation and routes, world ports and terminals, ocean carriers including types and motive power, bunkering, cargo with a study of coal, shipping services including documents, marine insurance, organization and management problems, rates and finances, America's merchant marine with an analysis of the LaFollette and Jones acts.

While the book contains much of general knowledge, it fills a want in supplying a complete and up-to-date manual on the entire problem of shipping.

* * *

20th Century Guide for Marine Engineers, by J. A. Ramsey and J. Rosbloom; cloth; 537 pages, 4¾ x 6¾ inches; published by the David McKay Co., for sale by MARINE REVIEW, Cleveland; price $3.00.

This book treats of reciprocating engines, boilers, gas engines, turbines and diesel engines, and as most guides are intended to be, is replete with questions and answers, tables, illustrations, examples, and short descriptive matter. The book is divided into what are practically 21 chapters covering arithmetic; development of the steam engine; boilers; piping; valves; pumps; injectors; feed water heater; condensers; evaporators; dense air ice machine; packings; lubricants and lubrication; getting under way on ship; diesel and semidiesel engines; gas engine; steam turbine; specialties and auxiliaries; electricity. There are 131 illustrations carrying, in addition to the title line, descriptive textual reference. The authors, connected with the steam and internal combustion engineering schools of the navy at Mare Island, Cal., acknowledge their indebtedness to naval engineers and other engineers and to manufacturers of power equipment, the book explains. The authors are practical men of broad experience.

Marine News in a Personal Way

Intimate Gossip About What Leaders in the Maritime World Are Doing

JOSEPH SCOTT, general manager of the States Marine & Commercial Co., Inc., 17 Battery place, New York, has resigned to become manager of the steamship department of the Transmarine Corp., a subsidiary operating company of the Submarine Boat Corp., Newark, N. J. From 1900 to 1905 he was with Melchier, Armstrong & Dessau; from 1905 to 1917 with the Lamport & Holt line, and from 1917 to 1922 with the States Marine & Commercial Co., Inc. In April, 1919, Mr. Scott was appointed by the shipping board as a special expert, attached to the shipping section of the American delegation to negotiate peace at Paris. After the treaty of peace he was assigned to assist in reorganizing the European branch of the shipping board, in London.

* * *

R. L. WHITE has been made district manager at 809 Kresge building, Detroit, for the Wilson Welder & Metals Co., Inc., 132 King street, New York.

* * *

ERIC KRAG, San Francisco ship broker, has been appointed manager of the newly established charter department of the General Steamship Corp.

* * *

JOHN J. LYONS, for many years export freight manager for Patterson, Wylde & Co., Boston, recently resigned his position. Mr. Lyons had been associated with the company for 20 years.

* * *

SIR ALFRED BOOTH has resigned the chairmanship of the Cunard line, owing to continued ill health, and has been succeeded by SIR THOMAS ROYDEN, deputy chairman.

* * *

C. H. CHANDLER, until recently manager of the New York office of Sudden & Christenson, has been transferred to San Francisco to assume charge of the company's steamship department.

* * *

L. L. BATES, foreign freight agent for the Admiral line, with headquarters at Seattle, has left for the Orient to remain three months making a survey of conditions in the Far East.

* * *

CAPT. EUGENE E. O'DONNELL, manager of the marine department of C. H. Sprague & Son, Boston, has resigned as chairman of the committee on seagoing personnel, of the American Steamship Owners association. A. J. MCCARTHY, manager of the American flag steamers of the International Mercantile Marine Co. and vice chairman of the seagoing personnel committee has been named to succeed Captain O'Donnell.

* * *

R. J. RINGWOOD, formerly vice president of the W. L. Comyn Co., has resigned as an official of the shipping board. It is reported he will become general manager for the Luckenbach Steamship Co.

* * *

Z. T. GEORGE has been named assistant general manager on the Pacific coast for the Luckenbach line with headquarters at San Francisco. He will be assistant to H. C. CANTELOW recently appointed Pacific Coast manager for this company.

* * *

L. S. SCHWARZSTEIN has resigned his connection with G. W. Sheldon & Co. and has organized the Mercury Shipping Co., 17 Battery place, to engage in a general export and import freight forwarding, marine insurance and customs house brokerage business.

* * *

CAPT. J. R. RUNDBERG, of the Transatlantic Steamship Co., Gothenberg, Sweden, was in San Francisco recently to established the European-Pacific coast-Australian service of that company. The General Steamship Co. has been appointed Pacific coast agent of the Transatlantic, with headquarters in San Francisco.

* * *

C. A. ASKEW, vice president and general manager of the Atlantic, Gulf & Pacific Steamship Co., has left for the home office in Baltimore, after an extended tour of inspection of coast ports with A. P. HAMMOND, following the latter's appointment in February, as Pacific coast manager of the company.

* * *

J. P. SUTHERLAND, head of the passenger and mail section of the shipping board, has been appointed eastern passenger agent of the Pacific Mail Steamship Co. Mr. Sutherland for 17 years was in charge of bookings over the company's lines in the New York office of Thomas Cook & Sons. He will direct the passenger office of Pacific Mail at 10 Hanover Square, New York. A branch office has also been opened in the Alexandria Hotel building, Los Angeles, with CLAY HUTCHISON, in charge of the passenger traffic.

* * *

R. C. MORTON, who has represented the Pacific Mail Steamship Co. at Manila and Hongkong for nearly 30 years, has resigned to take a position as special representative of the shipping board in the Orient, his territory extending from Yokohama to Vladivostok.

* * *

J. W. SACKRIDER has been made manager of the marine department of George B. Carpenter & Co., Chicago. Mr. Sackrider has been with the organization for about 20 years, and during the last 10 years has been closely identified with the marine department as its chief outside representative.

* * *

CAPT. DAVID BAIRD, president of the Victoria & Vancouver Stevedoring Co., Vancouver, B. C., was elected president of the Northwest Waterfront Employers' union at the annual meeting held at Portland, Ore. V. A. CARTWRIGHT was named vice president for the Portland district, J. A. RANKIN vice president for Astoria, A. M. INGERSOLL for Tacoma and Seattle, and A. M. DOLLAR, vice president for British Columbia.

* * *

CAPT. DANIEL MALMAN, master of the United American liner MOUNT CLAY, has been assigned to the command of the RESOLUTE. Captain Malman has followed the sea since early youth, his first experience being with the firm of H. Troop & Sons, St. John, N. B., owners of sailing vessels. While in their employ he rose from the rank of ordinary seaman to master. In 1888 he joined W. R. Grace & Co. and took charge of his first steamship. From 1900 to 1912 he served with the American line. In 1912, Captain Malman became associated with the American-Hawaiian Steamship Co. and was in command of the CALIFORNIAN when she was torpedoed and sunk off the French coast in 1918. He became master of the MOUNT CLAY in 1919.

Agree on Insurance Law Changes

New York Representatives of American and Foreign Companies Back New Legislation—To End Discrimination Against Americans

AS a result of efforts made by representatives of authorized and marine insurance companies, a number of suggested changes in New York marine insurance laws have been recommended to the insurance superintendent who has drafted a bill which is heartily endorsed by marine underwriters. Foreign companies, not licensed in New York state, although securing business there, through their representatives expressed their willingness to pay a tax on business secured in New York provided such a tax could be worked out. The amendments to the insurance law carry out in general the following principles:

"That because of its different nature, marine insurance should be kept entirely separate from other classes of insurance for all purposes of regulation.

"The character and conditions of the subject matters of such insurance, engaged in foreign trade, render it impractical to impose upon such business the limitations and regulations possible with other classes of insurance relating to subjects having a fixed location.

"The conditions under which brokers may place marine insurance with foreign unauthorized insurers should be defined by law and conducted under the license, supervision and control of the superintendent of insurance.

"There should be a strict prohibition against acting as agent or performing agency functions in behalf of unauthorized insurers.

"Representatives of unauthorized insurers and marine adjusters should be allowed to survey and adjust losses in this state, but may not act as agents of the insurer in making payment of loss except under policies taken out by shippers or consignees not residents of New York state.

"Marine insurance legislation should be designed to place authorized companies upon a basis of competitive equality with unauthorized companies."

The proposed changes in the law include the revision of the definition of marine insurance to include the following phrasing "for loss or damage to property or death of any person, whether legal liability results therefrom or not, during, awaiting or arising out of navigation, transit, travel or the construction or repair of vessels." Heavy penalties are provided for handling insurance for unauthorized insurers unless the broker has been specially permitted to place business with unlicensed companies by the insurance department. Any broker who is licensed to do business with a foreign insurer will be required in future to keep records of all transactions and to produce them at any time.

The committee which was responsible for drafting the bill also had a supplementary measure based on the principles contained in the model marine insurance bill for the District of Columbia, passed recently by the senate and house, providing for levying a tax upon the profits of a marine insurance company, instead of on the gross premiums received. Upon the advice of the superintendent of insurance, this measure was withdrawn and may be introduced at some future time.

* * *

Seek Mid-Western Trade

NEW YORK, looked upon as the marine insurance center of the country, through which practically all marine insurance is placed, may find its position threatened by Chicago, where recently the Insurance Co. of North America, one of the largest marine companies, greatly increased its marine underwriting facilities in the middle west. Other companies, it is believed, will not be long in following its example. Possibilities of Chicago becoming a really large marine insurance center will be increased considerably if the proposed Chicago-to-the-ocean waterway project is carried out. The handling of claims in the West will be of value to importers who will not be required to wait while their papers are being handled through the home office of the companies a long distance away.

* * *

Urge Change in Laws

BOSTON marine insurance brokers have been appearing before the joint committee on insurance of the Massachusetts house urging that the restrictions that hamper the development of the America marine insurance business be removed and the methods of taxation be amended to aid domestic shipowners who are finding it hard to compete with foreign competitors. American vessels should be able to procure insurance without having to pay a tax which foreign shipowners do not have to pay, the committee was told. The underwriters urged that the state legislature adopt a bill similar to the model marine insurance bill for the District of Columbia, which was introduced as an example of a law to be followed in all states to aid in the development of America marine insurance. The model bill, which was introduced by Senator Jones in the senate and Representative Edmonds, its author, in the house, provides among other things that marine insurance companies be taxed only upon their profits and not on gross premiums received. The bill has been endorsed by the National Convention of Insurance Commissioners and similar measures are likely to be introduced in a number of states this year.

* * *

English Firm Fails

TOO extensive investment in nonliquid assets is blamed by many marine underwriters as the cause for the failure of the City Equitable Fire Assurance Co. of London, the United States assets of which have been taken over by the New York state insurance department to protect the interests of the company's American policy holders and creditors. Up to a relatively short time ago, the City Equitable was in a prosperous condition and the immediate cause of its collapse is laid to its investment of several hundred thousands pounds of its reserve funds in nonliquid securities. Although the City Equitable did a business of £1,000,000 in premiums last year, American shipowners and merchants will not be losers to any great extent, it is said.

* * *

Losses Force Firms Out

AFTER-WAR conditions in the shipping world have caused the Aetna Fire Insurance Co., Hartford, Conn., to announce its withdrawal from the ocean marine insurance field. At a special meeting of the directors of the company on March 2, it was decided to abandon the issuance of this form of insurance and the company's New York office, managed by Talbot, Bird & Co. was notified of the decision. Like most companies in the marine field, the Aetna Fire suffered heavy losses in 1921, the premiums received amounting to $1,689,726 and the losses to $2,010,523.

Statements filed by companies during the past few weeks show that not many were able to pull through the year with any profit on their books. In some cases the ratio of losses exceeded 200 per cent and it is, therefore not surprising that some of the

companies are withdrawing. The following figures show the amount of premiums collected and losses paid, so far reported:

The City Insurance Co., of Pennsylvania, premiums $3656*, losses none; Columbia Insurance Co., New Jersey, premiums $30,552*, losses $23,462; Fire Association, Philadelphia, $284,032, losses $257,888; Inter-Ocean Reinsurance, $2,355, losses $294; New Hampshire, Manchester, N. H., $77,155, losses $98,486; Northwestern National, Milwaukee, $1357*, losses $118,611; Pacific Insurance Co., $66,481, losses $9232; Phoenix Insurance Co., England, $42,856, losses $53,493; St. Paul Fire & Marine, St. Paul, $641,654, losses $1,003,179. Premiums followed by a star were paid out by the insurance companies for reinsurance.

* * *

Will Remove Handicaps

AT a recent conference between Meyer Lissner commissioner of the United States shipping board and the board of managers of syndicate B, constituting all-American companies, which insure the government's equity in ships that the board sells, the question of more favorable rates on shipping board vessels was again aired. A committee was appointed to draft amendments to contracts with Syndicate B with the idea of putting on a real commercial basis all underwriting done by this syndicate. The changes are planned to make it competitive instead of arbitrary as heretofore and remove any cause for complaint of purchasers of ships that Syndicate B is unfair, discriminatory and excessive. It was agreed that the same rates would be quoted in Syndicate B as are quoted in Syndicate C which is competitive with the foreign market.

The complaints of the shipping board and shippers, managing operators and purchasers of shipping board vessels that the rates on these boats are unfair and discriminatory were discussed. Mr. Lissner pointed out that many operators of shipping board boats are entitled to liner ratings on the same basis as other approved lines and that the ships are now being run by experienced operators. Mr. Lissner told the underwriters that the number of operators has now been reduced to 43, exclusive of tugs and tankers, and that those operating are now of the first class. They were invited by Mr. Lissner to meet a committee of the Emergency Fleet corporation the latter part of March and look over the records of the operators now employed in handling shipping board vessels.

Following the meeting, Mr. Lissner declared himself to be entirely satisfied with the conference and said that one of its results will be that underwriters will co-operate with the shipping board both in hull and cargo insurance with a view to helping it work out its problems so that the remainder of the tonnage may be disposed of on a satisfactory basis.

* * *

Insist on Good Packing

UNDERWRITERS are attaching more and more importance to the manner in which goods for shipment are packed by the shipper and most companies will not accept any risks for theft and pilferage unless the packing comes up to a specified standard. One of the chief faults of the shipper, which the underwriter is continually having to point out, is the habit of disregarding entirely the weight of the goods being shipped and of using lumber which is much too light to withstand the rough handling received in transit. In shipping machinery, the greatest care must be taken in selecting strong lumber and bracing the package adequately both on the inside and on the outside. Many companies have found it necessary to add to their forces inspectors to look at the packing of goods and pass on the adequacy before the company is willing to accept the risk.

* * *

Lumber Premiums Drop

PACIFIC coast marine underwriters report falling off in the lumber trade to the Orient which has been one of the chief sources of premiums. The decrease in demand is believed to be the result of the seasonal let-up in the Japanese demand. The insurance rate on lumber to the Orient is low.

* * *

New Ship Type Appears

A NEW type of carrier which is now being built to handle cargo from Great Lake ports through the barge canal to New York is arousing the curiosity of marine underwriters. It is understood that the vessel will have a deadweight capacity of about 4000 tons, will be 300 feet long, 43 feet wide and 24 feet deep. A stirring propeller in the bow will aid the rudder and the vessel will be equipped with diesel engines, according to the specifications which have been received at marine insurance offices.

All past records of the Portland municipal grain elevator were recently broken when the Japanese freighter SEINE MARU received 70,000 bushels of bulk wheat from only two spouts in 2 hours and 23 minutes.

Book Reviews

The Law of the Sea, by George L. Canfield and George W. Dalzell; cloth; 315 pages, 5½ x 8½ inches; published by D. Appleton & Co.; for sale by MARINE REVIEW; price $3.00.

Third in a series of manuals on training for the steamship business projected by the United States shipping board, this book is intended for the use of mariners, ship operators and students. It is prompted, like others in the series, by the necessity born of the world war making it imperative that more Americans know the business of the seas. The authors are admiralty lawyers, both in active practice and were selected for their fitness for the work.

Legal points affecting shipowners, masters, operators and seamen and of the ship itself from the time it is contracted for, are set forth in the book. In addition, a summary of the navigation laws of the United States is prepared by Jasper Yeates Brinton. References are given throughout the book to statutes applying to the points under discussion. It does not take up marine insurance which is treated in another volume of the series.

The 17 chapters and three appendices cover maritime law, title and transfer, owners and managers, the masters, seamen, carriage by sea; contracts of affreightment, bills of lading and charter parties; liabilities and limitations, maritime liens, mortgages and bonds, collison, towage and pilotage, salvage and general average, crimes committed at sea, wrecks and derelicts, wharfage and moorage, admiralty remedies and protests, cases, etc.

* * *

Practical Design of Marine Single and Double Ended Boilers, by John Gray; cloth, 124 pages, 5¾ x 8¾ inches; published by the D. Van Nostrand Co. and furnished by MARINE REVIEW for $3 net.

This is the second edition and has been revised and enlarged. The author is a lecturer on boiler design at an English technical college. The book in its original form was intended as a guide to draftsmen and engineers who were already familiar with smaller types of boilers but lacked the experience necessary to design large single and doubled ended boilers. Tables of imperative importance to any boiler designer were included.

The new edition followed the alteration to the survey rules. In addition to the revisions, descriptions of the general construction of a cylindrical marine boiler and of forced draft smoke boxes, furnace fittings, etc., have been added. The book will meet the needs of boilermakers and students for a simple presentation of boiler work. The tables are valuable.

New U. S. Port for Asia's Trade

Berkeley City and Private Capital Will Unite To Build Splendid Port Terminal -- Details of Development

BY HARRY H. DUNN

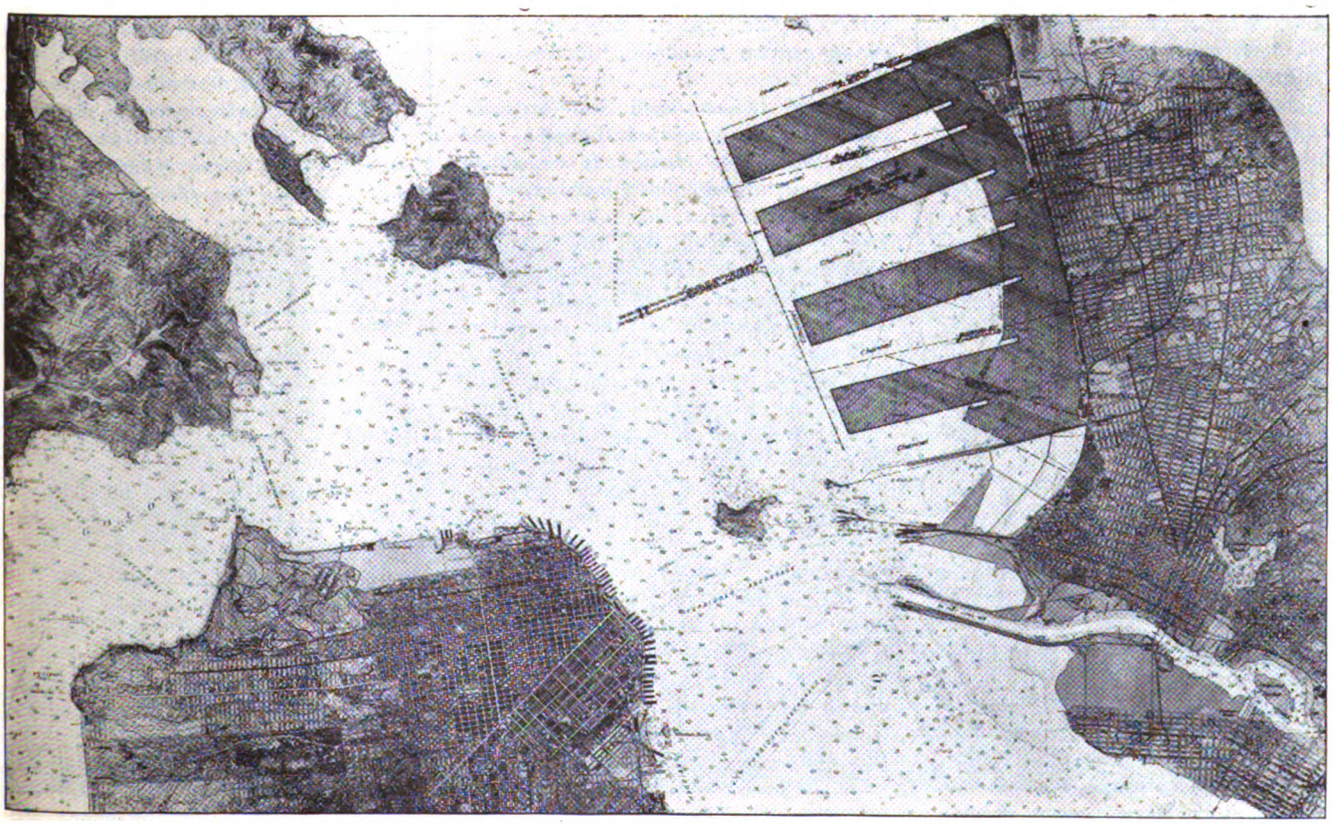
THE great commerce of the world's largest ocean, valued at more than two billions of dollars for the single year of 1920, and pouring 75 per cent of the raw products which come into the United States every 12 months through the ports of Washington, Oregon and California, has caused a California city to combine with private capital in preparation for the construction of one of the largest and most modern maritime terminals in the world.

The city is Berkeley, located on the mainland rim of the Bay of San Francisco, directly east of the Golden Gate, the deepwater entrance from the Pacific ocean into that bay. Arrangements for construction of this large terminal, and the virtual creation of a port for Berkeley—which is now faced by waters barely more than 8 feet deep for a considerable distance from shore—have progressed so far that complete engineering plans have been prepared, and contractors are now engaged in making estimates on the work to be done. B. F. Cresson Jr., and Charles W. Staniford made the survey for the project and drew up the engineering plans. Mr. Cresson is chief engineer to the New York-New Jersey Port and Harbor Development commission, and Mr. Staniford was for 13 years chief engineer of the department of docks and ferries of the city of New York.

The terminal, for the construction of which the city of Berkeley and private interests owning land along the waterfront have entered into the Pacific Port Terminal, Inc., is, eventually, to consist of four units, but the present plans contemplate first the construction of one unit which will offer 35,000 lineal feet of berthing space, with a depth of 30 feet at mean low water; 3,000,000 square feet of wharf shed space on the filled bulkhead; 3,500,000 square feet of warehouse space, and 1500 acres on the mainland for factories, rail terminals and similar industrial plants. Plans have been made for shipside railroad tracks, with classification yards of a capacity of 2000 cars. Hard-surfaced highways to shipside for motor-trucks also are contemplated, as well as all manner of cargo handling machinery, including facilities for the transfer of freight from inland-waterway carriers directly into the holds of deep-sea ships tied up at the terminal.

The bay of San Francisco, which is available to vessels of the deepest draft at all tides, is the largest landlocked harbor in the world, having 79 square miles of safe anchorage. Wishing to avoid the congestion of traffic which has come to New York harbor with the growth of that port, the cities around San Francisco bay are taking time by the forelock and preparing for the construction of a terminal which will relieve San Francisco of the overplus of Pacific traffic and give the California port adequate commerce-handling facilities commensurate with the growth of American trade on the Pacific ocean.

Located midway along the Pacific coast, San Francisco furnishes the most convenient, as well as the largest and best-equipped, distributing center for commerce for all the countries bordering on the Pacific ocean, as well as the best for the Pacific and western states of the Union with Europe,



ENTRANCE TO SAN FRANCISCO BAY SHOWING PLAN OF DEVELOPING BERKELEY, OAKLAND AND ALBANY HARBORS

by way of the Panama canal. Inland waterways traffic on the Sacramento and San Joaquin rivers is large and three trunk lines of railroad, with five main tracks, operate directly to and from the east shore of the Bay of San Francisco, where the new terminal and port is to be located.

The city of San Francisco occupies virtually the only location on the shores of the bay at which there is natural level land adjacent to deep water. This level land is now fully occupied, however, and further deep water frontage must be obtained by dredging, and using the material dredged to fill up lands on the water front. The area selected by Berkeley is directly opposite the Golden Gate, and, being on the mainland side of the bay, obviates the necessity for ferrying freight trains, or a long land detour around either end of the bay. It is interesting to note, in this connection that transferred freight traffic to and from San Francisco amounts to rather more than 6,000,000 tons a year. Direct handling of freight from shipside to transcontinental freight car over the new terminal will, of course, eliminate this ferry freight service.

The scheme of construction is designed to proceed by units, instead of involving the entire construction at one time, so as to bring the initial development into use for the purpose of providing equipment for handling ocean borne commerce, to raise revenue for further construction of other units as soon as possible, and at the same time to permit construction work to proceed in advance of actual requirements. The engineers having come to the conclusion that quays are more economical of construction and of operation than piers, the plans provide for the construction of berthing wharves by the formation of solid quays, or moles, within which will be deposited material recovered by dredging the channels, a process which will create, automatically, the required industrial lands.

The intention of the engineers in laying out the terminal has been to avoid all possible sources of congestion of freight, and, also, to insure the availability of suitable industrial sites in the vicinity for commercial expansion. The engineering plans have been approved by the municipality of Berkeley, and the United States government has indicated its approval by granting the permits necessary to proceed with the work. The Pacific Port Terminal has been incorporated under the laws of California, and plans to operate under a lease of the waterfront granted by the city of Berkeley. The city is a partner in the enterprise, having a direct financial interest, as well as the interest of deriving general benefit for the community.

Messrs. Cresson and Staniford, the engineers who prepared the plans and who have been retained as consulting engineers throughout construction of the terminal, give the following concise description of the new port:

"This marine terminal development will include sufficient wharfage for short-term storage for the assembling of cargo in advance of the ship and for holding cargo from the ship until it may be dispatched. It will include rail connections directly alongside the ship, where commodities may be transferred directly from cars to ships, or the reverse, and will include suitable machinery for such transfers. Directly connected with the transit sheds will be warehousing facilities for the long-term storage of commodities, including cold-storage which may be arriving by ship, and which could be put immediately and directly into cold storage if that were considered advisable from the point of view of market conditions. These warehouses not only will be connected directly with the sheds alongside the ships, but also will have highways of access for motor trucks, and convenient rail connections directly alongside. Thus is provided wharfage for ships, railroads adjacent to ships, transit storage sheds, and long-term storage sheds, with rail and truck access to each. These are the essentials of commercial marine development.

"Further than this, to make it easy and economical for industries to operate, the general terminal development plan will include buildings in the immediate vicinity of the commercial facilities, in which buildings manufactores can be conducted. Such a combination of factories and commercial facilities make for economy of operation. Ample railroad yard facilities are provided in the classification yard, just back of each unit and directly connected with it, will provide space for 2000 cars. Trolley lines, which merge here from the entire east bay district, are carried to and through the quay to the ferry terminal at the southwesterly end of the quay. This ferry terminal is designed to comprise four slips, two of them for railroad carfloat service, with a supporting yard, and two of them for passenger and vehicular service to San Francisco, or

Purposes of Port

THE new Pacific port terminal, to be constructed jointly by the city of Berkeley, Cal., and private interests, is designed to furnish terminal facilities for the tremendous and growing commerce of the United States to and from the countries of the Pacific ocean; to provide a foreign industrial zone (free port); to furnish a means of ingress to the manufactories of this country for the raw materials of pan-Pacific lands, since 75 per cent of the raw materials imported into the United States come by way of the Pacific ports; and to assist the bay of San Francisco to its full development as a port.

The prospective total value of the foreign trade of the United States in the Pacific area for the calendar year of 1921 is more than two billions of dollars, equal to the total value of the foreign trade, exports and imports, of the United States with all countries, 20 years ago.

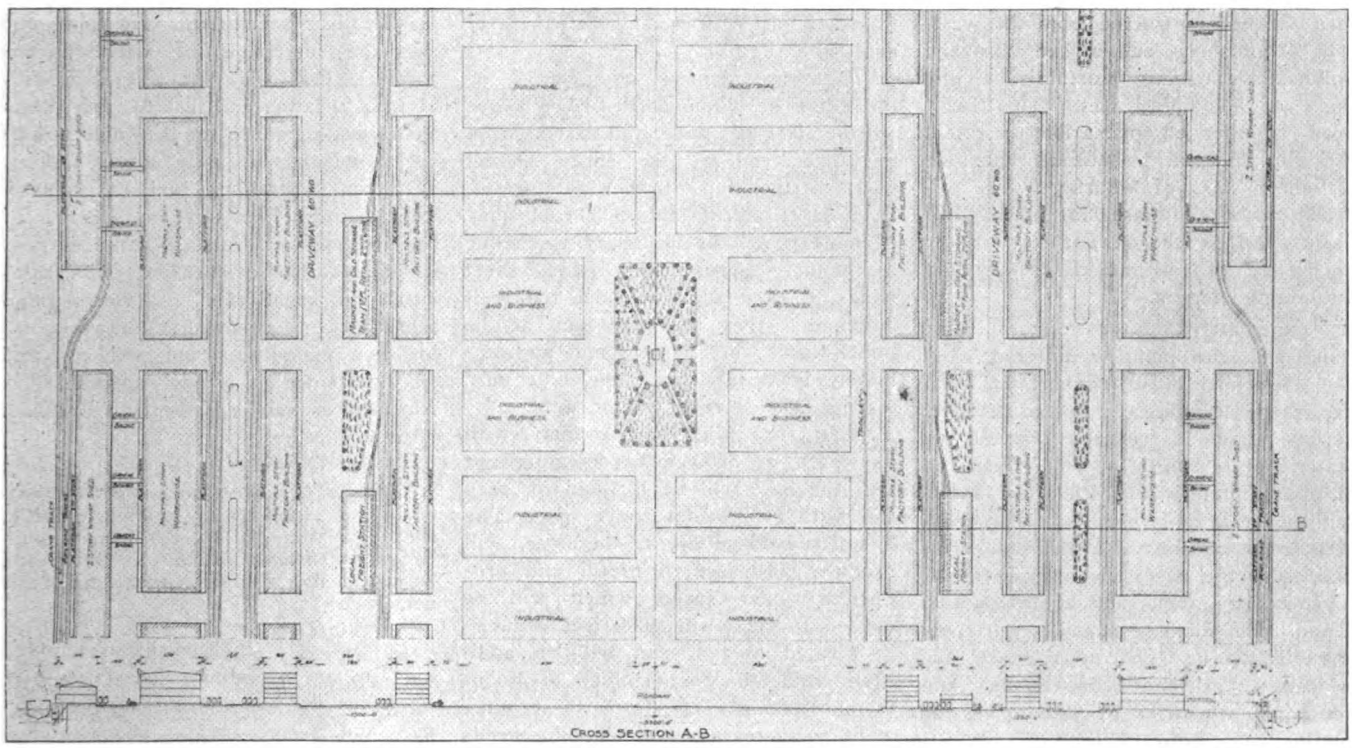
Hence the necessity which has stirred the city back of the Golden Gate to construct one of the largest and most modern ports in the world.

Covers 6000 Acres

THE completed Pacific port terminal will offer to the commerce of the Pacific ocean 140,000 lineal feet of berthing space, with a total land area for warehouses, manufactories and railroad and motor truck terminals of 6000 acres.

Each unit, of which there are four in the plans, will be separated from each other unit by a 3000-foot deepwater channel. On each unit will be 3,000,000 square feet of bulkhead area for wharf sheds. For warehouses, there will be such area as required up to 3,500,000 square feet, and in each unit there is 1500 acres of land for factories, rail terminals and general business. Space is provided for tracks and paved roadways to all parts of the property, with space in the classification yard of each unit for 2000 freight cars. The berthing space offers 35,000 lineal feet, with a depth of 30 feet at mean low water.

The direct distance to the Golden Gate and the deep salt water of the Pacific is seven miles, or one mile less than the present steaming distance from the Golden Gate to the midway point on the San Francisco piers.



PLAN AND CROSS SECTION OF THE COMMERCIAL AND INDUSTRIAL PORTION OF ONE UNIT OF THE BERKELEY TERMINAL

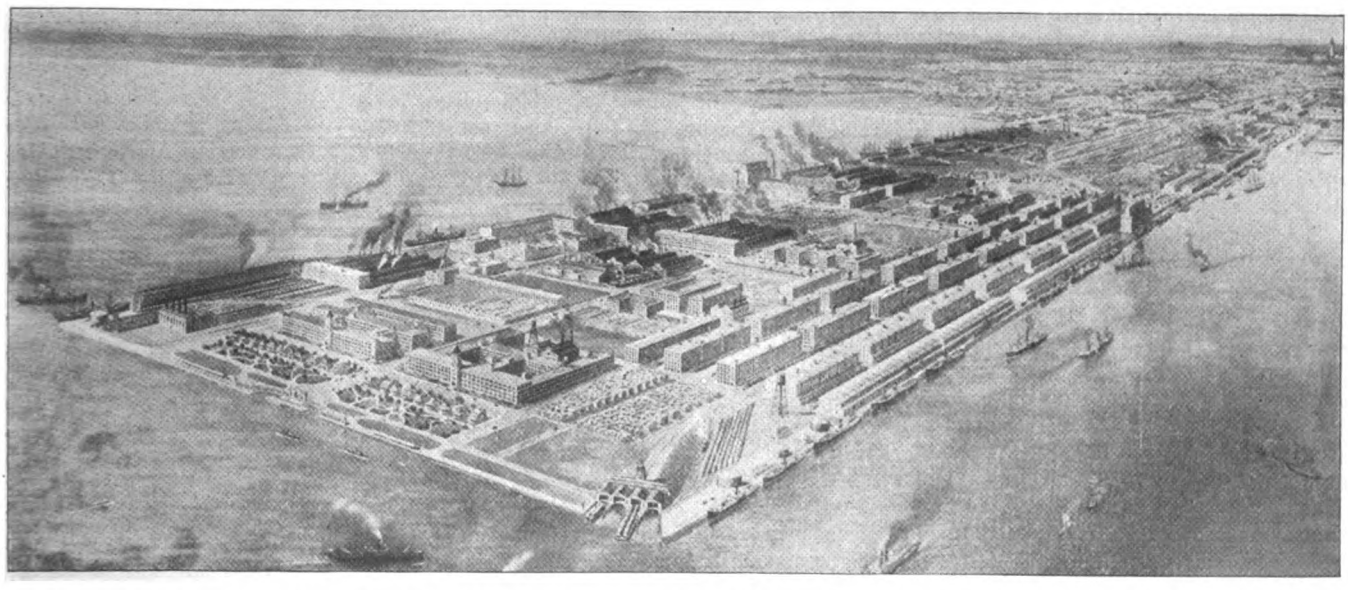
to such other points as may be contemplated in the ferry service.

"At the extreme westerly end of the quay, an ornamental water gate, or landing stage is planned. Facilities for air service will be provided inshore and a foreign trade zone, formerly known as 'free port zone,' also is contemplated. The most modern and efficient of freight handling and cargo moving machinery will be installed on the quay."

The methods of reclaiming the land, and the general plan of construction of the first unit—which plan will be followed on the other units as rapidly as they are built—are interestingly described by the engineers as follows:

"The most economical method of reclaiming the land will be by the process of hydraulic dredging, pumping the material so dredged behind retaining bulkheads. * * * A form of wide quay development, whereby the material for the fill forming the quays may be got from the dredgings in the channel is the most economical method of developing this frontage. * * * * * An approach channel 300 feet wide at the bottom will be dredged to a depth of 30 feet below mean low water from existing deep water to the outer end of the unit. The material from this approach cut will be pumped inshore behind a bulkhead platform, for its retention at its outer section.

"This approach channel will be continued 3000 feet further inshore and dredged to a depth of 30 feet below mean low water, and the material from this cut, called the 'wharfage channel,' will be pumped behind the bulkhead platform just described, at its inner section. Commencing at a point 300 feet inshore, a wharf platform will be constructed, extending for a length of 3000 feet inshore, along the south line of the first unit, forming a quay for the accommodation of deep-sea vessels. A bulkhead of a more temporary na-



SKETCH SHOWING HOW BERKELEY TERMINALS ARE TO BE UTILIZED FOR COMMERCIAL AND INDUSTRIAL PURPOSES

ture will be constructed from the westerly, or outshore, end of the wharfage bulkhead, extending northerly a distance of about 600 feet. This bulkhead is intended primarily to retain the fill, and will be utilized later for a lighter class of wharfage, for railroad yards, as base for the yacht basins and as the head quay for the anchorage of railroad car floats and automobile ferries.

"Immediately in the rear of these bulkheads, the pumped material from the above-mentioned channels will be deposited, bringing it up to a level surface about 12 feet above mean low water, for a length of 3000 feet, and an approximate width of 600 feet, forming an area on which is to be constructed a marine and railway terminal, with the necessary storage buildings, railway tracks and appurtenances. Upon this filled-in area a wharfage shed is to be constructed, with the necessary railroad connections and roadways, supported by warehouses for marine and railway terminal use.

"From the inner end of this wharfage channel, which is also the inner end of the filled area for terminal use, the channel is to be continued inshore to the line of the state grant. This channel is to be excavated by pumping to a depth of 20 feet below mean low water, for a width of 200 feet on the bottom, and the material pumped approximately at right angles to its axis to the rear of a temporary bulkhead constructed from the inner end of the filled area for terminal purposes, easterly or inshore a distance of about 11,000 feet to the line of the state grant and along a line 100 feet northerly from the south line of the unit. The material from the adjoining channel will be pumped behind the bulkhead, creating a top width of 56 feet, the material being allowed to take its natural slope northerly. On this filled top a railroad track and a motor truck and team roadway and sidewalk will be laid, to provide rail and vehicular as well as foot approaches from the upland to the marine terminal outshore.

"The approach channel, 200 feet wide at the bottom, previously described, will be continued inshore on private property, a distance of about 1200 feet by 300 feet wide at the bottom. The material from this basin will be pumped behind the bulkheads, built along three sides of the basin. The area between the line of the state grant and the present shore line, will be made by pumping, creating an upland area of about 90 acres. A railroad from adjoining main line railroads will be built, connecting the shore with the roadway approach to the terminal, on leased land, with roadways wherever necessary.

"The first complete unit started by the initial development described above will be 3000 feet wide, and extend from the outer end of the entire project back to the line of the state grant. In order to create this 3000-foot quay or mole it will be necessary to dredge a channel approximately 1500 feet wide, on each adjacent side, and it is anticipated that the next unit to be built would be constructed approximately 3000 feet from the first unit, leaving 3000 feet of water area.

"Thus, one filled unit or quay, with its width of 3000 feet projecting out into the bay, will be fortified on each side with a 3000-foot water space. The lateral wharfage front, therefore, will produce 6000 feet of useful and productive water space, which will be needed to serve the 3000 feet of newly created upland, and will, in addition, create the opportunity of building projecting piers from these quay walls to increase active shipping needs should occasion arise. After the completion of the first unit, the three additional units for which there is room on the waterfront area, can be constructed on similar lines, or modified as may seem necessary."

Book Reviews

The Gyroscopic Compass, by T. W. Chalmers, B. Sc., A. M. I. Mech. E.; cloth; 163 pages, 5½ x 8½ inches; published by D. Van Nostrand Co., New York, and for sale by MARINE REVIEW, Cleveland; price $4.00.

Appearing originally as a series of articles describing the gyroscopic compass and its theory and practice, the chapters in this book have been assembled with a view to offering them in a more permanent form. They afford a clear insight into the little understood principles of the gyrocompass. The reader will appreciate the author's efforts in avoiding a mathematical exposition of the device. The book is fully illustrated and the text references to the illustrations are clear and illuminative. The illustrations number 51 and the chapters 17. While the navies of the world almost universally use the gyrocompass, the merchant marine vessels have been slower to adopt it. For that reason, the book should have a wide appeal.

* * *

Practical River and Canal Engineering, by R. C. Royal Mirikin; cloth, 119 pages, 6 x 8¾ inches; published by J. B. Lippincott Co.; for sale by MARINE REVIEW, Cleveland; price $3.75.

Principles underlying treatment of river and canal engineering are set forth by the author who is chief civil engineer of the development commission of the Brazilian government. He points out that the subject is of increased importance due to the growing difficulties of transportation and that the field lacks an adequate treatise on the subject. The book contains frontispiece, maps, 12 plates, 89 other illustrations and 10 chapters which cover a general study of river formations, rainfall, river surveys waterways, floods, waterflow, river training and canalization of rivers and canals. The author has drawn from his own experiences and problems and has presented a study applicable to American as well as British and Brazilian waterway projects.

* * *

Shipping Office Organization, Management and Accounts, by Alfred Calvert; cloth, 199 pages, 5½ x 8½ inches; published by Isaac Pitman & Sons and furnished by MARINE REVIEW for $2.40 net.

The author is an Englishman who has his life in educating students in the fundamentals of shipping and of export and import trade. The treatment follows that used by the author in his classes. A shipping house is discussed from it organization, the text being carried on logically through the period of gradual growth until the house reaches its full development in all the many directions involved in this special field. All of the various documents employed are presented so that the explanatory text can be followed clearly.

While written especially for the young Englishman about to take employment with a shipping or foreign trade firm, the book will aid any one desirous of broadening his knowledge in these fields. The volume so explains the routine in connection with the exportation of goods by a shipping merchant that every shipping office clerk and most executives will find the book of value.

The United American Lines, Inc., New York, added the passenger steamer RELIANCE to its fleet on March 9. The transfer took place at Amsterdam, the home of the Royal Holland Lloyd line, the former owner of the vessel. The RESOLUTE, sister ship of the RELIANCE, was taken over from the Dutch company about a month ago. These liners, which were built in 1920 and are of the most modern type, will be operated between New York and Plymouth, Boulogne, and Hamburg in fortnightly service. The first sailing from New York is the RESOLUTE on May 2.

The first shipment of tinplate brought to the Pacific coast from Great Britain in eight years recently was discharged at British Columbia ports. It totaled 2500 tons.

Editorial

President Offers Promising Solution for American Shipping Problem

IN WASHINGTON, gossip spreads the report that President Harding wants history to record his administration as the one in which the merchant marine was revived. This report springs not from his recent message to congress proposing a ship subsidy. It is based on his public record. In practically no public utterance during the past 20 years has Mr. Harding omitted a vigorous plea for reviving America's ocean strength. His interest in marine affairs is not a result of the complete failure of the government to make headway in handling or selling its war-born fleet. The present expensive experiments have merely emphasized the appeal which the American merchant marine has always held for him.

A spectator in the house of representatives Feb. 28 when the President personally delivered his subsidy message before a joint session of the senate and house found the scene alive with encouragement for American business. Two of the three branches of the government were giving their undivided attention to the merchant marine question —a condition probably without parallel in the country's history.

Facing him were about 450 congressmen. The assembly room was the same one in which many earlier subsidy proposals had been vigorously fought and in which the last determined effort to reconstruct American shipping had been voted down about 20 years ago despite previous favorable action by the senate. But the Harding proposals received a sympathetic hearing which promises successful translation into law.

Opposition to ship subsidy has always originated in the legislative groups from the middle west and from the south. The industrial north, busy with its own problems of domestic trade, has never been sufficiently interested to combat this opposition. This analysis while historically accurate supplies no pilot to read the course present subsidy plans must follow. The Democratic south was in legislative control when billions were spent to supply the merchant ships which the denial of a few millions before the war had prevented private owners from building. The shipping board experiment is so well understood and its terrific expense so keenly felt that few congressmen can be held in line by a party tradition to oppose the most likely plan offered for relieving the taxpayer of today's enormous cost.

The middle western group has also a broader vision. Stoppage of trade in this country in the first few months of the war held back shipments of farm produce and brought directly home to every farmer his dependence upon ocean freight carriers for a sustained market. Obviously, he senses now the primary importance of controlling his own carriers instead of relying upon the facilities offered by other countries and which may be withdrawn on a moment's notice. The American farmer has studied and is studying the marine problem instead of holding his previous position of guiding his opposition to shipping largely on his prejudices.

A third factor, the industrial north, also has a clearer vision. Foreign trade instead of being a pastime to some business men and an unknown quantity to most, has come to mean the difference between profit and loss to a great many companies. A number of the major industries have for the first time more capacity than the normal domestic market will absorb so that foreign trade has become a necessary balance wheel. The economic trend in the south, the middle west and in the north has won an intelligent interest in shipping which has been denied ever since the country started to expand from a bare strip of land along the Atlantic coast.

Enactment of the Harding program will not by itself solve the marine riddle. A fundamental necessity for foreign shipping is the machinery for developing foreign trade. This country has still insufficient foreign connections. The marine strength of England comes from her merchants who can supply and accept cargoes all over the world. American merchants must be placed abroad to develop return cargoes. This combination of merchants and shippers may take years to perfect but obviously the initiation of shipping enterprises are a prime necessity in bringing about these foreign connections. Opportunities for internal development in this country are on the decline: the larger profits will come more and more from investment in foreign enterprises. The ships must be ready for this American expansion and until these connections are fully grown, the government must bear some share of the cost.

Secretary Hoover puts the cost of the present form of government ownership at $150,000,000. The outside cost of the Harding plan is said to be $30,000,000, making an acknowledged subsidy immensely cheaper and greatly widening the prospect of selling the ships.

Protection for American industries has become an ingrained part of the country's economic policy. Some of the industries originally most desirous of attaining full growth behind a tariff wall have now in their strength become doubtful of the merit of such a policy. The shipping business, the most competitive enterprise in the world, was denied this protection throughout the period when the country was concentrated on its domestic development. Now that exports must be developed to keep American plants occupied, the prospect for intelligent handling of the shipping question is distinctly favorable.

World Charter Market Reviewed by

FAVOR SUBSIDY

Marine Leaders in All Lines Find Encouragement in President's Plan —Shipping Situation Is Improving

MARCH was ushered in with a plea for subsidy for American shipping. President Harding, in a message to congress, gave full endorsement of the administration to that plan of subsidizing private shipping which had been recommended by the shipping board and private experts after months of study of the difficult problems of operating ships under the American flag. Every shipping board to date has discovered that it is highly unprofitable to continue state ownership and state control of ships. Even with the reductions in overhead effected by the present shipping board, and with only about one-fourth of the government fleet in operation, the operating loss on the government ships amounts to approximately $60,000,000 per annum. The enterprise probably is still costing $150,000,000 a year. The shipping board concludes, and President Harding approves, that it would be much more economical to subsidize private shipping under the American flag for a sum in the neighborhood of $30,000,000 a year and thereby create a market for the sale of this government fleet which is constantly taking money out of the pockets of taxpayers.

Ship operators, approving the plan as they do, view the subject as a purely political matter and other than having a reflection in the market on shipping shares, feel it can do little immediately to improve the shipping situation.

Plan Relief for Pioneers

An agent of the shipping board has conferred with a number of the pioneer purchasers of government tonnage during the past month with the idea of adjusting the accounts outstanding. These companies purchased, at around $200 a ton, vessels which today have a market value of probably not over $50 a ton. They were purchased, in many instances, upon the deferred payment plan and not all payments have been met. It is now understood to be the intent of the board to readjust the purchase price and have the companies take additional ships in adjudication. Definite decision in any of the cases is yet to be reached.

In order that the board could exercise a free hand in disposing of government tonnage, the whole government fleet was advertised for sale. This complies with the law which provides for published offers before a ship can be sold. Now that all the vessels have been advertised, the board can enter into negotiation with prospective purchasers at any time a vessel is wanted.

The subsidy proposal contains provision for the cessation of army transport services. One is now maintained to the Philippines and another is the Panama line operating out of New York. The Panama line is reported to have suffered a deficit of $700,800 last year and the shipping board is inclined to back the demands of the private ship operators that the line be discontinued. Coincident with this, it is reported the shipping board is withdrawing allocations of its tank ships and is planning to establish its own line of tankers from Mexico.

Charters hereafter made by the shipping board on the bareboat basis will be for a minimum period of one year, it has been announced. A number of charters have already been made upon this basis. Approximately 40 shipping board vessels have been taken on the basis of 50 cents per ton per month.

Many changes are being made in the ships operating under the flag of the United States line. The various "state" ships, 502 feet in length, operating between New York and London, will have the expensive first class equipment removed and berths arranged, permitting a reduction in passenger charges for the voyage. The two 535-foot ships which this line will operate to Bremen will continue their first cabin accommodations and also carry steerage passengers. The POTOMAC, however, will be made into a strictly one class boat for the Bremen run. These changes, which are now in progress, will considerably alter the nature of the service to be rendered by this fleet in the transatlantic trade this summer.

More Ships for South America

Two more 535-foot vessels have been allocated to the Munson line for the South American run. These are the PAN AMERICA and the WESTERN WORLD. They are identical with the SOUTHERN CROSS and the AMERICAN LEGION which are already in this service. The SUSQUEHANNA is being taken from the idle fleet at New London, Conn., and will be reconditioned to make at least one voyage, while the PRINCESS MATOIKA is out of the service of the United States lines. Some measure of optimism was noted in the reported withdrawal of 10 government vessels from the idle fleet in one week. This was the first major indication of an improvement in shipping conditions. Also it was learned that the Polish American Navigation Co. may be revived and may take over again the five vessels which were originally purchased from the shipping board. The board is holding out an offer of adjustment to this company and its president is on his way to Poland to look for additional

W.A. Harriman's Views

THERE are three reasons for the present condition of American shipping," said W. A. Harriman, chairman of the United American lines in a recent address. "The first is that the government is in the business. Government operation never can and never will be efficient and it never will get the support of our business men. Secondly, our steamship lines are new and many of their owners are not sufficiently experienced in operating the boats. Finally, the salaries we pay our crews are much more than are paid by other countries. Trade does not follow the flag in any sense of the word. There has been too much flag waving and flag talking and too little sound thought on the economics of the situation."

subsidy for the project. In the present emergency, it appears the American steamship companies are not averse to seeking foreign connections and assistance when it is impossible to find assistance at home. A number of such plans are understood to be under way at the present time. A new freight service from Baltimore and Philadelphia to Havre and Antwerp under the Norwegian flag has been announced by the Roosevelt Steamship Co., Inc.

The American-Hawaiian Steamship Co., one of the United American lines, has sold seven of its coal vessels to the Coastwise Transportation Corp., a new company, which includes in its personnel Harris Livermore and Lester Monks. The vessels involved are the BRISTOL, COASTWISE, HAMPDEN, MIDDLESEX, NORFOLK, SUFFOLK, and TRANSPORTATION.

The American Ship & Commerce Corp., the holding company of the Harriman interests, has sold the former Kerr fleet to a Hungarian company and the vessels have been transferred to the Hungarian flag. The new owners are the Oceana Sea Navigation Co., Ltd., Budapest, in which the American Ship & Commerce Navigation Corp. and the Atlantic Sea Navigation Co., Ltd., Budapest, are jointly interested. The vessels transferred formerly were under the Austrian flag and came under the American flag as a result of the war.

New Foreign Alliances Shown

The extension of the Harriman interests in the navigation affairs of this section of Europe was one of the outstanding developments of the month. Not only has it been announced that this company is interested in a Hungarian fleet, but is also a part owner of a Russian company. The American Ship & Commerce Corp. holds a quarter interest in the German Russian Transport Co., which will insure the Harriman interests of a direct shipping connection between the United States and Russia. The Hamburg-American line also owns one-fourth interest in this Russian company, the remainder being owned in Russia. The Russian company is not now active. Rather extensive alterations will be made to the transatlantic liners RESOLUTE and RELIANCE before they are put in the New York - Hamburg service by the United American line under the American flag. Improvements will be made in the second and third class quarters which will make these ships equal to any of the passenger ships operating in the Atlantic trades. The RESOLUTE has been delivered to her new owners at Hamburg and will make her first trip over in April. The RELIANCE follows shortly after.

Canal Transits Gain 5

FIVE more vessels passed through the Panama canal in 1921 than in 1920. The number, including United States navy and other vessels exempt from the payment of tolls, was 3040 in 1921, compared with3035 in 1920. The vessels in commercial service and public vessels of foreign nations which paid tolls totaled 2783 in 1921, against 2814 in 1920. The aggregate net tonnage of these vessels, measured in accordance with canal rules, was greater, being 11,435,811, as compared with 10,378,265; and the tolls collected in 1921 totalled $11,261,098 against $10,295,362 in 1920. The cargo carried in 1921 was 10,707,005 tons and in 1920 11,236,119 tons.

LINES EXPAND

American and Foreign Services in New Alliances and Add Additional Vessels—Some Old Runs Resumed

The Maine Steamship line has announced the resumption of freight service between New York and Portland, Me. This service was suspended during the war and the ships taken over by the government. The Admiral line has sent the reconditioned RUTH ALEXANDER to the Pacific coast to operate between California ports and Seattle. This line has obtained the ex-navy transport GREAT NORTHERN for the same run. The Merchants & Miners Transportation Co. plans to build two new passenger and freight vessels for its service between Baltimore and Savannah.

The White Star line has added the ocean giantess, HOMERIC, to its New York services and will follow this up within a few months with the MAJESTIC, the largest vessel ever constructed. The Holland-American line will add two new crack passenger liners to the New York run within a few months. These will be known as the SPAARNDAM and VOLENDAM, the former of which was launched last month. They will be 450 feet in length.

The White Star line, with the sailing of the VEDIC on April 23, will inaugurate a direct service between Canada and Germany. Halifax and Bremen will be the terminals, with Southampton as a port of call. The Royal Mail Steam Packet Co. will use the VESTRIS, VANDYCK and VAUBAN in the transatlantic trade until next summer. These vessels are owned by Lamport & Holt, a Royal Mail subsidiary, and have been used in the New York-Buenos Aires run.

German Service Resumed

The North German Lloyd has formally resumed its passenger services to New York with the steamer SEYDLITZ. This is a small vessel and carries cabin and steerage passengers. Prior to the war she was engaged in the East Asiastic trade but better ships will be built for the line, it is promised. Docked across the river from the SEYDLITZ was the HOMERIC flying the British flag. This latter steamer was originally built for the North German Lloyd and was then known as the COLUMBUS.

The North German Lloyd began its services by quoting the regular conference rates, both passenger and freight. It is understood the line formally will become a member of the conference in good standing. In the present condition of the market, steamship lines feel it is imperative to hang together as otherwise the bottom might drop out of the market. It is understood that the foreign lines have invited the shipping board services to rejoin a Levant conference which is now

in the process of being created. For a month or more all Levant rates have been open.

English shipping agents, last month, notified shippers that the Hague rules which contemplate the creation of uniform principles for international bills of lading will be adopted. The National Foreign Trade council has approved these rules, and the United States chamber of commerce is studying them. The shipping board has given notice to some of the western railroads that they must end traffic agreements they now have with Japanese and other foreign steamship lines which are considered prejudicial to American steamship lines. The roads will be given until July 1 to abrogate such traffic agreements with foreign ship lines.

Sugar Chartering Active

Many small steel steamers have been chartered by the shipping board for the Cuban sugar trade. These have gone to Ward, Munson, the Baltimore Steamship Co., and Lykes Bros. These vessels have been let upon a basis to compete with foreign tonnage in this trade. It is understood that Scandinavian ships were obtained in the sugar trade for $1.60 to $1.85. The charter market showed considerable weakness during the first half of February, but toward the end of the month some firmness in rates was reported. This was due not to the excessive number of inquiries or to a smaller number of ships offering, but more especially to the spot demand and the unwillingness of owners to accept any lower rates.

Grain rates for Irish ports noted an advance, and March business for the European continent has been good. Sugar has been more or less inactive to European ports. This was due to the low quotation made by the shippers and the advance in sterling. Time chartering, with the exception of the West Indies trade, has been featureless. One of the outstanding developments of the business during the past month, however, was the renewed interest in coal. A number of inquiries were received from Italy. Pressure has developed for tonnage to Rio and River Plate. Chile has also drawn some tonnage.

Freights on the north Pacific, generally speaking, are weak. Tonnage is ample in every trade and the past month has witnessed reductions in some directions with prospects of rate wars looming. The situation seems to bear out the recent statement of Robert Dollar that there will be little, if any improvement, in freights within the next year. This prediction is further emphasized by the apparent willingness of foreign shipowners to least their vessels on time charters for 6 or 12 months.

Seek To Revive Conference

On the Oriental route, efforts to revive the westbound conference have not yet been successful although several lines are willing to make rate agreements. On this run, there is an over supply of space. Japan has been buying sparingly of forest products during the last month. That market is reported overstocked and the principal ports are congested with lumber and logs. It is believed, however, that after the present situation is cleared, Japan will again be in this market for heavy shipments of timbers and lumber. The rate on lumber is now close to $14 while space for large timbers is available at between $14.50 and $15.

The copper rate to the Far East has dropped from $6 to about $4.50. This cargo has eased off although an increased movement is anticipated in the near future. The wheat and flour rate is still nominally $6 although space has been offered at $5.50. Australia is proving a strong competitor in the Orient and Pacific coast millers find it difficult to sell their product in China and the Phillipiness.

Foreign Tonnage Hampers

In transpacific charters, Japanese steamers have been fixed at $14 per thousand feet for full cargoes of lumber to Japanese ports. Several fixtures to United Kingdom for wheat are also noted, the rate being between 37s 6d and 40s. Time charters are ranging at around 4 to 5 shillings, no additional fixtures having been closed during the month. Increasing competition by foreign tonnage, which is willing to meet existing rate levels and concessional conditions exacted by shippers, is hampering American ships the number of which operating on the Pacific continues to decrease.

On the intercoastal route, open rates on lumber are in effect. The conference rate of $18 was abandoned early in the month due to outside operators. It dropped to $12 but has again advanced to $14 where the steamship lines hope to hold it firm. Carriers have been offered at $14 but shippers as a rule prefer to ship in parcel lots. On other cargo, conference rates are in effect but adjustments still are being made on various items to harmonize with competing rates by rail.

Conference Agreements Resumed

Following three months of open rates to United Kingdom-Continental ports, the various lines have resumed their conference agreements except as to wheat and flour. Thousands of tons of wheat were moved at 30 shillings or less but the rate has now firmed to 40 shillings at which level tonnage is in fairly good demand. Although only 10 per cent of last year's wheat crop is still on hand, exporters expect to move this surplus within the next 60 days.

Steamship lines to Peru and Chile are still asking $18 for lumber although some reductions on other cargo have recently been made effective on this route to establish a parity with lines operating from east coast and gulf ports to west coast of South America.

Sail tonnage is weak. The demand for sailers is at a minimum as in most trades steamship rates are so low that competition by sail is out of the question. Two small schooners have been chartered for South Africa at $22.50 which is now the going rate to Durban and ports. To Australia, one or two sail fixtures have been closed during the month but at very low rates. Callao has been done by sail at $17.50 but lumber shippers are now offering only $15 to Peru.

Await Rate Parity Outcome

The most important subject before Boston marine circles at the present time is the pending action on freight rates which it is expected will equalize rail rates from central and western points to all of the north Atlantic ports. The favorable outcome of this rate question undoubtedly would mean a big stimulus to traffic through Boston. Trading to South America and Mediterranean points has shown a decidedly favorable improvement. Vessels have carried full cargoes and in some cases have increased sailings.

Export traffic through the port of Boston has improved somewhat during the last month in nearly

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to March 4, 1922, on Future Loadings

New York to	Grain	Provisions	Cotton (H.D.)	Flour	General cargo cu. ft.	General cargo 100 lbs.	††Finished steel	Coal from Virginia cities
Liverpool	4s	$0.60	$0.25	$0.21	$0.40	$0.75	$7.00T	.....
London	4s	0.60	0.25	0.21	0.40	0.75	7.00T	.....
Christiania	$0.23	0.40	.....	0.28	0.45	0.90	8.00T	.....
Copenhagen	0.23	0.40	.....	0.28	0.45	0.90	8.00T	.....
Hamburg	0.16	0.35	0.25	0.21	0.45	0.82½	9.00T	.....
Bremen	0.16	0.35	0.25	0.21	0.45	0.82½	9.00T	.....
Rotterdam	0.20	0.32½	0.25	0.25	0.40	0.75	8.00T	$4.25T
Antwerp	0.18	0.32½	0.30	0.20	0.40	0.75	6.00T	4.25T
Havre	0.18	0.50	0.22½	0.22	0.40	0.75	8.00T	4.25T
Bordeaux	0.18	0.50	0.22½	0.22	0.40	0.75	8.00T	4.25T
Barcelona	0.25	20.00T	0.55	10.00T	—20.00T—		12.00T	4.25T
Lisbon	0.25	20.00T	0.55	10.00T	—20.00T—		12.00T	4.00T
Marseilles	0.22	0.75	0.75	0.40	—20.00T—		7.00T	4.50T
Genoa	0.22	0.75	0.42½	0.42½	0.50	1.00	9.00T	4.50T
Naples	0.22	0.75	0.42½	0.42½	0.50	1.00	9.00T	4.50T
Constantinople	0.30	15.00T	0.75	0.30	—19.00T—		16.00T	5.25T
Alexandria	0.25	15.00T	.....	0.30	—19.00T—		12.00T	4.50T
Algiers	0.35	0.85	.....	0.40	—22.00T—		12.00T	4.25T
Dakar	.....	14.50T	.....	15.00T	—20.00T—		10.00T	.....
Capetown	10.50T	23.00T	.....	15.00T	—23.00T—		12.50T	.....
Buenos Aires	.....	.....	.....	.....	—20.00T—†		8.00T †	4.00T
Rio de Janeiro	.....	.....	.....	.....	—18.00 T—†		8.00T †	3.75T
Pernambuco	.....	.....	.....	.....	—19.50T—†		10.00T †	4.25T
Havana	0.17½*	0.37½*	.....	0.17½*	0.47*	0.94*	0.20*	1.50T
Vera Cruz	.....	0.45	.....	0.30	0.45	0.90	0.35	3.00T
Valparaiso	.....	1.07	.....	0.75	0.60	1.07	12.00T	4.25T
San Francisco	.....	0.75	.....	0.85	.....	.....	0.60	.....
Sydney	.....	.....	.....	.....	20.00 to 25.00		11.50	.....
Calcutta	.....	21.00T	.....	.....	—21.00T—		18.00T	.....

T—ton. †Landed. ††Heavy products limited in length. *Extra charge for wharfage.

From North Pacific Ports to	Lumber Per M. ft.
San Francisco	$6.50
South California	7.50
Hawaiian Islands	11.00 to 12.00
New Zealand	15.00 to 16.00
Sydney	15.00 to 16.00
Melbourne-Adelaide	18.00 to 20.00
Oriental ports	15.00 to 17.00
Peru-Chile	17.00 to 18.00
South Africa	22.50
Cuba	18.00
United Kingdom	90s
United Kingdom (ties)	70s
New York	14.00
New York (ties)	15.00
Buenos Aires	17.00
	Flour and Wheat
Oriental ports	$6.00
U. K.	37/6 to 40s/T
Scandinavia	40s to 42/6T
Mediterranean	40s to 42/6T
	Steel
Oriental ports	$ 5.00T
	Cotton
Oriental ports	$10.00T
	Apples
United Kingdom	$1.00 per box
	Copper
Oriental ports	$ 4.50 to 5.00

Principal Rates To and From United Kingdom

	s	d
Grain, River Plate to United Kingdom	30	0
Coal, South Wales to Near East	16	0
Coal, Newcastle to France	6	0
Coal South Wales to Buenos Aires	13	6
Iron ore, Bilbao to Middlesbrough	8	0
General British market, six months time charters, per ton per month	5	0

Bunker Prices

At New York

	Coal alongside per ton	Fuel oil 16 baume per barrel	Diesel oil gravity 25-30 per gallon
Apr. 6, 1921	$6.40 @ 6.75	$1.95	6.5 cents
July 8.....	5.75 @ 6.25	1.45	4.25 @ 5.25 cents
Oct. 4.....	5.85 @ 6.15	1.45	4.25 @ 5.25 cents
Jan. 9, 1922	5.50 @ 5.90	1.25	4.40 @ 5.50 cents
Feb. 6.....	5.50 @ 5.90	1.20	4.50 @ 5.50 cents
March 4....	5.40 @ 5.75	1.10	‡5.00 cents

‡Gravity 30

At Philadelphia

	Coal per ton	Fuel oil 16 baume per barrel	Diesel oil gravity 25-30 per gallon
Apr. 7, 1921	$5.75 @ 6.00	$1.98	5.7 cents
July 7.....	4.90 @ 5.45	1.47½	4.5 cents
Oct. 6.....	*6.10 @ 6.25	1.80	4.00 @ 4.25 cents
Jan. 9, 1922	*5.10 @ 5.35	1.50	4.50 @ 5.00 cents
Feb. 8.....	*4.90 @ 5.25	1.25	3.50 @ 4.25 cents
March 6....	*5.40 @ 5.65	1.15	†4.00 cents

*Trimmed in †Gravity 27

Other Ports

Boston coal, per ton,	$7.20
Boston, oil, per barrel	1.05
Cardiff, coal, per ton.	20s
London, coal, per ton.	26s
Antwerp, coal, per ton	26s

all services. The most notable exception to the improvement is in the lines to Scandinavian points, which have shown a decline in tonnage handled and report a dullness in inquiry at the present time. Grain moving direct to Russian ports, as a result of this government's relief work, may have cut into the regular grain shipments to Scandinavia. Russian grain shipments have practically been completed, and this combined with the nearby opening of the port of Montreal will mean that little further grain will be shipped through Boston this season and also that Portland's grain shipments will rapidly drop off.

Several new lines either have been established or are planned for the near future for Boston. The Cunard line announces a new freight and passenger service from Boston to Queenstown and Liverpool. The White Star line also contemplates resuming its Boston-Liverpool service. Service to Liverpool was tentatively started by the sailing of the HAVERFORD early in March.

Coastwise traffic has shared in the general improvement. Freight rates from Boston to Norfolk have advanced from 15 to 25 cents per ton on coal during the past month and are firm at present. Traffic to and from the Pacific coast has held up with full cargoes reported on practically all sailings. Increased sailings are to be inaugurated shortly between Boston and St. Johns. The Leyland line has a sailing planned March 29 for Manchester, which service will be continued if freight warrants. A new line known as the Coastwise Transportation Corp., has taken over a fleet of colliers from the American-Hawaiian Steamship Co., and this will be operated in the coastwise trade out of Boston.

Improving Trade Brings Call for Ships

From Our European Manager

London, March 11. (By cable.)—Broader activity in most lines of business has developed generally throughout the world bringing an increased demand for ships. In particular, this gain is reflected in the need for vessels to carry coal exports, to load ore in Spain and to bring grain from North and South America and Australia, rice from the Far East and nitrates from Chile. This increase in demand while distinctly encouraging is only fairly started so that the surplus vessel tonnage still awaiting employment is large. Rates have shown little signs of improvement and are still dragging. The Chamber of Shipping of the United Kingdom at its annual meeting last week unanimously passed a resolution asking that the British government prepare to retaliate against the proposal of President Harding for "discrimination favoring American ships."

What the British Are Doing

Short Surveys of Important Activities in Maritime Centers of Island Empire

IT IS unofficially estimated that loss of cargo due to pilferage of goods at the port of London in 1921 was approximately $5,500,000 at current exchange. The Chamber of Shipping of the United Kingdom is waging a vigorous campaign to eliminate this evil, it being pointed out that some shipowners have to pay claims for pilferage at a rate 20 times greater than the average paid before the war. The pilferage committee of the Chamber of Shipping says that the principal reason for the enormous increase in thieving on the docks in Great Britain is found "in the general debasement of common honesty which is a legacy of the war." Claims for pilferage are now decreasing and it is believed in London that they can be reduced to the scale prevailing before the war.

An unsatisfactory aspect of the situation is said to be the lack of police interest in pilferage cases, and their inactivity in tracing fences and other receivers of stolen goods. Most of the police difficulties, however, are in foreign and especially eastern Mediterranean ports. In some countries no assistance can be obtained from the police even when the thieves are caught red-handed. Nothing less than armed robbery is said to have existed at one Mediterranean port, but measures are now being taken to remedy this state of affairs. The plan has even been entertained of going back to the days of the Napoleonic era and arming British merchantmen, not against submarines, but against brigands.

* * *

AN OFFICIAL Russian report states that the Russian mercantile marine at the present time consists of 273 steamships compared with 883 steamships in 1913. No particulars as to tonnage are given. It is noteworthy, however, that the present fleet is confined entirely to the Baltic, White, Caspian and Black seas, no Russian vessels being engaged in trade on the high seas at the present time, although a number were so employed before the Bolshevik upheaval.

* * *

SIR ALEXANDER KENNEDY, chairman of the Northumberland Shipbuilding Co., Howden-on-Tyne, speaking recently at the launch of the DALEMOOR, one of six vessels purchased by the revived Moor line, said that although British shipbuilders have reduced costs to the limit, few orders are forthcoming. Labor must make an effort to meet the situation. Transport, coal and taxation costs are too high. He said he thinks the bottom of the depression has been reached. Shipowners must realize that prices are now as low as possible and that there is no use waiting longer to place orders for ships. Sir Walter Runciman, chairman of the Moor line, said that the company although buying six vessels at present has a much bigger scheme in view. This latter statement is significant, the Moor line being one of the most prominent British steamship organizations and one of those which was liquidated voluntarily a couple of years ago at the top of the market with big profits to the stockholders. This company now thinks the time has arrived to re-establish its fleet.

* * *

ALFRED HOLT & CO. LTD., Liverpool, has just placed an order for a large motor vessel with Scott's Shipbuilding & Engineering Co., Greenock, Scotland. In this ship combined steam and oil engines of the Still type will be fitted. The length of the ship will be 400 feet with a beam of 52 feet. She will be equipped with twin-screw machinery of 2500 brake horsepower. This is the first order for a motorship with this class of machinery. A 350 brake horsepower experimental engine of the Still type has shown a fuel consumption of 0.375 pounds per brake horsepower with solid fuel injection and it is probable that the design of the experimental set will be followed in the engines of the new vessel.

* * *

CAPT. JOHN PRITCHARD, ex-commodore of the Cunard fleet, who was the first captain of the MAURETANIA, died recently at Meols, Cheshire, England. He began his career as cabin boy in a small coasting schooner sailing from his native town of Carnarvon, and before he retired he commanded no fewer than 14 big Cunarders. He was master of the CAMPANIA when the first Marconi wireless apparatus was installed in her. As captain of the CARONIA he took soundings of the new Ambrose channel at the entrance to New York harbor and this channel was officially opened by him in the CARONIA. As commander of the same vessel, he distinguished himself by taking that great liner in to the inner harbor at Alexandria a feat which hitherto had been considered an impossibility by the port authorities. He was in command of the MAURETANIA when, in September, 1909, she broke the world's record by maintaining an average speed of 26.06 knots. He was 35 years of age when he joined the Cunard service. Fourteen years later he received his first command.

* * *

SERVICES of Ellerman's Wilson line are numerous running directly from Hull to various ports of North and South Europe, also to Egypt and India. The fleet consists of about 60 steamships and has just been increased by the delivery of the CITO. This is a steel coasting steamship built by Messrs. Swan, Hunter & Wigham Richardson, Ltd., at Southwick-on-Wear, and engined at their Neptune Works, Walker, Newcastle-on-Tyne. The CITO is of the well-deck type and has been built to Lloyds highest class. Her length between perpendiculars is 173 feet 6 inches, her extreme breadth 28 feet 1½ inches and molded depth 14 feet. The ship's deadweight carrying capacity is 900 tons. The triple expansion single screw engines have cylinders 13½, 22 and 36 inches in diameter respectively with a stroke of 30 inches. Steam is supplied by a cylindrical boiler with a working pressure of 180 pounds to the square inch. Her speed is 9.5 knots.

* * *

THE first postwar congress of the International Association of Navigation will be held in London in the summer of 1923. Lord Desborough, chairman of the Port of London Authority, will be president of the congress which will be attended by leading representatives of shipping interests, inland navigation bodies, and dock and harbor authorities of the chief countries of the world. The meetings of the congress will take place at the Institution of Civil Engineers, and subjects will be discussed under two heads, one section dealing with ocean navigation, and the other dealing with inland navigation.

The last congress held took place in Philadelphia in 1912. The congress ar-

ranged for Stockholm in 1915 had to be abandoned on account of the war. The congress will prove of importance in discussing the best means of using the water communications of the world.

The congress is officially supported by the governments of the following countries: Argentina, Australia, Algeria, French West Africa, French Equatorial Africa, Belgium, Brazil, Chile, China, United States, Denmark, Spain, France, Finland, Great Britain, Greece, Italy, Japan, Mexico, Monaco, Norway, Holland, Portugal, Persia, Rumania, Sweden, Switzerland, Siam, Tunisia, Uruguay and South Africa. The Suez Canal Co. and the Danube Commission will also be represented. The King of England will be patron of the congress.

* * *

PROPOSALS to abolish the war bonus of £1 6s 6d ($5.75) per week which shipyard employes in Great Britain have enjoyed since 1917 is being made by the Shipbuilders Employers' association. The proposal of the employers is to withdraw the bonus in two instalments, the first of 16s 6d per week immediately and the second of 10 shillings per week in about three months. Leaders of the labor unions, however, are taking up a strongly hostile attitude to an acceptance of these proposals. It is expected, therefore, that the employers' terms will be rejected by the unions. It is not believed, however, that there will be any strike at the present time on account of the extremely unsatisfactory position in which the unions find themselves. The Boilermakers and Iron and Steel Shipbuilders union of Great Britain for instance has a membership of 102,634, of which 33,873, or about one-third are unemployed at the present time. The shipyards on the Tyne and the Clyde have so little work on hand at present that they would rather welcome the prospect of a shutdown. It is believed, however, that an adjustment finally will be reached between the employes and the unions concerned.

Take New Ship from South America Run

THE new Lamport & Holt liner VANDYCK recently was placed in service between New York and the east coast ports of South America, but later was withdrawn. The VANDYCK was the largest and most luxurious steamer Lamport & Holt had ever operated in the run, and was brought out to meet the competition of the fast, new American 535-foot liners which the Munson line has been operating.

Built by Workman, Clark & Co., Ltd., the VANDYCK is a twin-screw vessel, the principal dimension being: Length overall, 526 feet; breadth, 64 feet 3 inches; depth, 43 feet; and displacement, 21,000 tons. The propelling machinery consists of two sets of double reduction geared turbines of latest design, capable of developing 7000 horsepower on service for a speed of 17 knots, and having a big reserve power.

In two stokeholds are two large double end and four large single end circular and multitubular boilers fitted with forced draft and superheaters, and adapted for oil fuel burning. The oil fuel arrangements are modern and the bunker facilities are sufficient for a round trip. Various auxiliary machinery is provided, including three turbo-driven dynamos, each of 90 kilowatts, supplying a system of over 2000 electric lights, in addition to the motors for various services and the fan ventilating system.

She is fitted with the usual British safety appliances, which are not so numerous as those on American ships. In the passenger arrangements, provision has been made for 300 first class, 150 second class, and 230 third class. The first and second classes are berthed amidships and the third in rooms on the upper deck forward. A number of the first class cabins are arranged for individual accommodation, other rooms being fitted up for two passengers each, and all have bedsteads fitted instead of berth arrangements. In the event of three passengers desiring one room, the rooms are large enough for a Pullman berth to be installed. A few of the berths are placed across ship.

On the bridge deck of the VANDYCK special cabins, having private bath in connection are grouped on either side of the main entrance hall. These rooms are specially decorated. The public rooms are extremely roomy and are comfortably and admirably decorated. The first class lounge, situated on the promenade deck is over 50 feet long, 40 feet wide, and lofty. A passenger elevator runs between this deck and the passenger decks. Adjoining is a stairway giving access to the same decks. The decorative treatment of these rooms is in French gray and gilt and electric sconces with small silk shades ornament the walls. The furnishings are in the style of Louis XVI, upholstered in silk damask and tapestry. Features of the lounge are a marble fireplace with a large mirror and highly decorated metal domelight.

A note of interest is added to the music room by a large tapestry panel in a central position. The ceilings are in rich fibrous plaster. Large sliding windows are arranged in bays and the floor is a bold design of linoleum tiling, over which a number of persian rugs are arranged.

Passing down the staircase through two large decoratively paneled entrance halls, the dining saloon is reached. This is the full breadth of the ship, and is over 75 feet long. The ceiling is high and in the center of it is a large open well, extending through two decks, giving a total height of over 26 feet. The decorative treatment is Georgian, and the walls are painted in ivory tones. The room provides accommodation for over 280 passengers. The restaurant principle of fitting small tables has been adopted. The furniture is mahogany and the chairs, which are portable, are upholstered in antique blue leather.

At the after end of the spacious promenade deck, a large smokeroom, with open air veranda cafe, is fitted. For the treatment of the smokeroom, the Jacobean style has been selected. There is a York stone chimneypiece, with a Jacobean dog grate, and an enriched plaster ceiling. The furniture is oak, and the chairs and settees are upholstered in chestnut hide, with loose cushions in velvet. Adjacent stairways give easy access to the smokeroom from the various decks, and the veranda cafe opens off the after end. The cafe is effectively panelled and painted.

Aft on the boat deck the space has been covered with netting and a full sized tennis court has been arranged. On this deck also is the gymnasium. Of further interest is the children's playroom, a photographic dark room, and a hairdresser's shop.

The second class accommodation is fitted up in a similar manner to the first with lounge, smokeroom, and dining saloon. A number of the first class staterooms are arranged so as to be interchangeable to second class. Special attention has been given to the ventilation. The heating is maintained by an installation of steam radiators after the American standard.

The ship carries a large range, ovens and special grill. Fresh bread can be baked every day and the baker's shop is fitted with an electric dough mixer. The ship, like the vessels operated by the Munson line, has a large cargo capacity.

Late Decisions in Maritime Law

Legal Tips for Ship Owners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

SECTIONS 4511 and 4530, United States revised statutes, for the protection of seamen, relate to the voyage, and impose duties on the ship and seamen for the voyage. Neither can renounce those duties during the voyage, it was held in the case of Hamilton vs. United States, 268 *Federal Reporter* 15. "These statutes on their face, and the judicial construction given them," it was further held, "leave no doubt of these conclusions: (1) The master cannot discharge the crew, and the crew can not demand wages in full, until the end of the voyage; (2) the end of the voyage is not a port of distress, but the port of destination; (3) seamen are bound to serve until the voyage ends in the port of destination, unless there has been a breach of the contract by the master as to the time of the voyage or in some other material particular; (4) extension of the time of the voyage by intention or neglect of the master is such breach of the contract as entitles the seamen to demand their release on that ground in any safe port; (5) but extension of the voyage beyond the time mentioned in the contract, due to perils of the sea which the master or owner could not be reasonably expected to guard against, is not a breach of the contract as to time, and does not warrant seamen in leaving the vessel or demand wages in full before reaching the port of destination; (6) on the other hand, seamen are entitled to their wages and discharge when the ship reaches the port of destination before the expiration of the stipulated time of the voyage."

* * *

Where a charter party contains a covenant wherein it is agreed that a scow is to be returned in like condition as on delivery, reasonable wear and tear excepted, and such scow was in good condition when chartered but when returned was in bad condition, it was incumbent upon the charterer to show how the damage occurred and that it was not caused through its negligence or through the negligence of any one to whom the charterer had intrusted the boat.—Schoonmaker Corners Co. vs. Lambert Transportation Co., 268 *Federal Reporter* 102.

* * *

In a contract to perform towage service, there is a warranty implied by law that the towing tug shall be seaworthy, properly equipped, and manned by a crew adequate in number and competent for their duty with reference to all the exigencies of the intended voyage, which may reasonably be anticipated, and the contractor, according to the decision in the case of Mylroie v. British Columbia Mills Tug & Barge Co., 268 *Federal Reporter* 449, can not relieve himself by anything in the contract from liability for failure to provide these essentials. Failure of the towing tug to provide a lookout stationed forward while navigating dangerous waters at night in stormy weather, it was held, constituted culpable negligence, and rendered the tug unseaworthy, and tug and owner were liable for stranding of the tow. A custom to the contrary, it was further held, can not relieve a towing tug from the legal duty to maintain a proper lookout, especially at night in dangerous waters.

* * *

A clause of a charter party fixing the rate of demurrage for delay beyond the lay days after time for loading or dischage commenced was held, in the case of Sugar Products Co. v. Mobile & Gulf Navigation Co., 268 *Federal Reporter* 815, not to measure the damages for detention of the vessel while awaiting designation by the charterer of the port of loading. "The sum for which a vessel can be chartered in the market is the best evidence of her value," it was decided, "and, in the absence of a market value, the value of her use to the owners in the business in which she was engaged, becomes a proper basis for estimating damages."

* * *

The specific question of whether the agreement of the entire crew of a ship, anchored in a port of refuge before the end of the voyage, to refuse to obey the orders of the master, and their united action in carrying out the agreement, while remaining on board, was endeavoring to make a revolt, within the meaning of Section 292 of the criminal code, was raised in the case of Hamilton vs. United States, 268 *Federal Reporter* 15, and the court, in answering the question in the affirmative, said: "This was not usurpation of the command from the master, for there was no effort to take charge of the ship. But evidently it was a successful endeavor to deprive him of authority and command on board, and to resist and prevent him in the free and lawful exercise of his command. The united action of a crew in refusing to yield obedience to the lawful command of the master deprives him of the authority and command he was in duty bound to exercise. This is as much resistance and prevention of the free and lawful exercise of his authority and command as an undertaking by a crew to deprive him of any inanimate instrumentality necessary to the command and management of the ship. A master may have possession of the ship alone, but he can not be in command of it, if the crew unite in refusing to carry out his orders. Command of a fortress means actual control of the garrison for military purposes. Command of a ship means actual control of the crew for nautical purposes. If all the garrison of a fortress, or all the crew of a ship refuse obedience to the commander, they deprive him of authority and command; they resist and prevent the exercise of his authority and command." However, it was further held that seamen are not bound to serve on a vessel which is unseaworthy, and they should be acquitted of the charge of desertion or revolt, or endeavor to revolt, if in apprehension of danger they leave the ship or refuse to serve, asserting and believing on reasonable grounds that the ship is unseaworthy, although it may turn out on further close investigation that it was in fact seaworthy, for reasonable apprehension of loss of life or limb is set above delay of the vessel.

* * *

A vessel intending to enter a narrow channel should so maneuver on approaching the entrance as to leave ample room for outcoming vessels to pass port to port, approaching the channel from the side she must keep after entering; and a vessel leaving a narrow channel should pass out, keeping to its starboard side of the channel, until she is well clear of the entrance, and should not change her course to port until she is well clear of vessels passing in. A narrow channel is defined as a body of water navigated up and down in opposite directions, and does not include harbor waters, with piers on each side, where the necessities of commerce require navigation in every conceivable direction.—KLATAWA, 266 *Federal Reporter* 120.

* * *

The fact that a vessel is privileged, and entitled to hold her course, does not excuse her from adopting such precautions as may be required by statute, and necessary to prevent a collision.—ADMIRAL WATSON, 266 *Federal Reporter* 122.

* * *

The public nature of the service upon which a vessel is engaged at the time of the commission of a maritime tort affords no immunity from liability in a court of admiralty, when the court has jurisdiction. Under section 9 of the shipping act of 1916, a government owned ship in the merchant service, or a privately owned ship, is not immune from arrest by reason of a collision occurring while the ship was owned by the government and operated by its employes for its public military purposes.—CEYLON MARU, 266 *Federal Reporter* 396.

Photographs from Far and Near

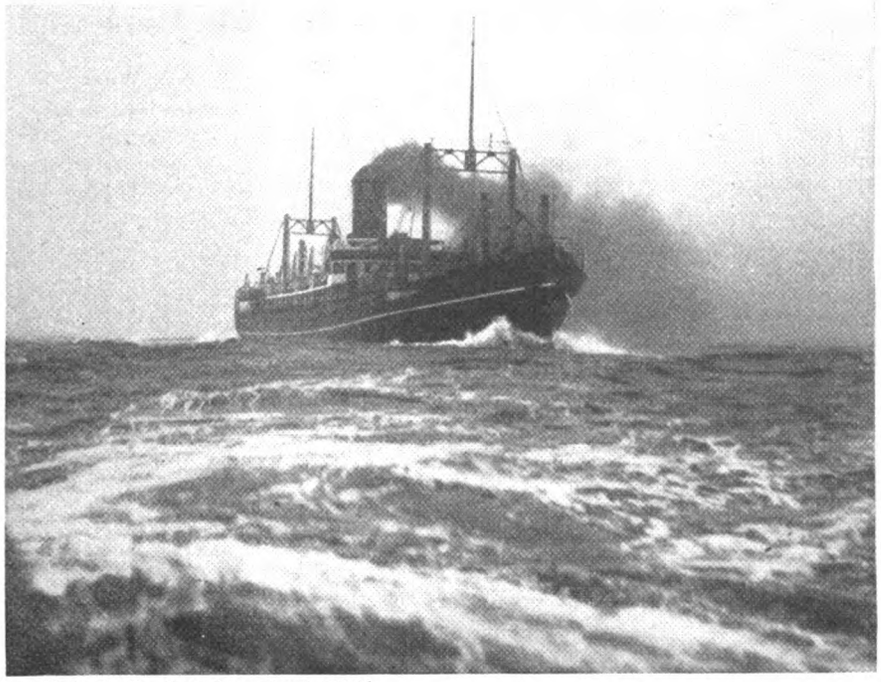
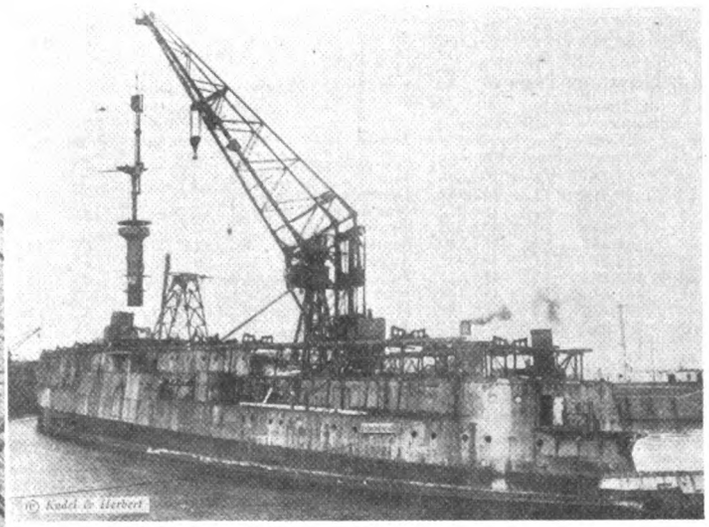
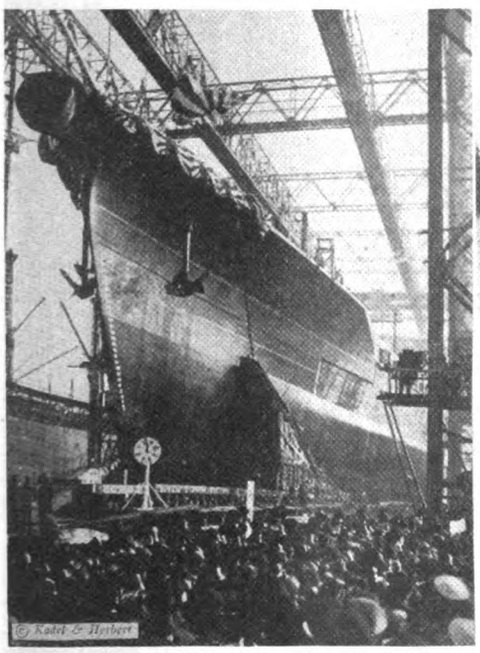


Photo by Frank & Sons, South Shields

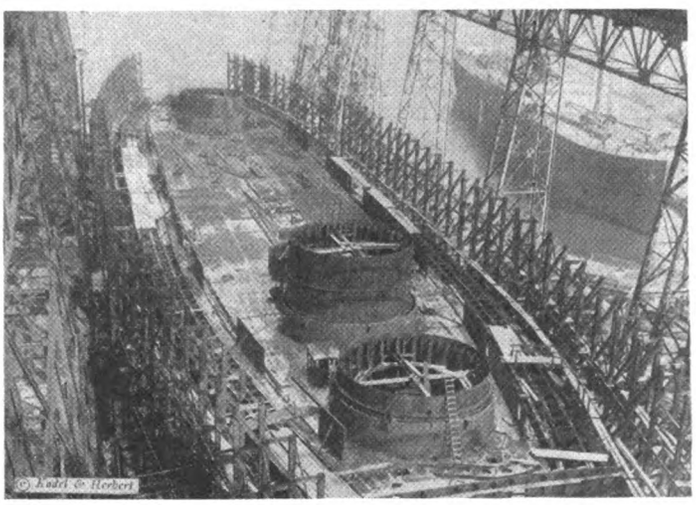
The Indo-China Steam Navigation Co., has just increased its fleet by the addition of the Kutsang, Chinese signifying "Increase in luck," built at Wallsend shipyard of Swan, Hunter & Wigham Richardson Ltd., Wallsend-on-Tyne. Trials at sea were accomplished successfully, and a speed of 13.6 knots on a draft of 23½ feet was averaged over a course of 40 knots. The Kutsang has an overall length of 434 feet, and is 54 feet beam and 31 feet deep. She carries 7800 tons deadweight on a draft of 26 feet, 3 inches and was built to Lloyds highest class



Crane lifting fighting tower from German battleship being reconstructed into merchant ship.



Japan recently launched her greatest battleship, Kaga, shown above, at the Kawasaki shipworks, amid great ceremony. This new sea fighter will be scrapped. Only a few days ago hundreds of men were working on the superdreadnaughts, South Dakota and Indiana, at Brooklyn, but this has now been stopped by the program for disarmament. At the right is the South Dakota as she appears today



Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	414	1,548,412	391	1,533,163
January	370	1,230,000	396	1,436,014
December, 1921.	398	1,372,663	436	1,604,960
November	423	1,543,430	415	1,506,071
October	413	1,662,564	428	1,644,729
September	385	1,304,544	417	1,556,645
August	478	1,583,991	390	1,300,897
July	394	1,456,304	403	1,423,109
June	408	1,368,334	419	1,425,649
May	425	1,454,033	365	1,328,643
April	410	1,453,056	438	1,509,353
March	455	1,574,526	448	1,539,885
February	424	1,407,133	374	1,315,556

Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)
(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	94	240,663	62	189,140
January	86	243,546	67	211,468
December, 1921..	89	256,660	90	285,894
November	89	249,873	87	252,606
October	86	239,103	67	204,652
September	60	143,434	66	195,558
August	84	208,961	61	144,029
July	75	178,925	61	148,674
June	71	176,968	74	214,524
May	110	295,617	70	178,464
April	105	255,249	79	209,854
March	102	306,512	87	242,606
February	104	285,369	75	221,402

Norfolk and Newport News

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922.	24	66,156	72	192,640
January	22	78,412	53	152,957
December, 1921.	24	83,609	64	184,012
November	27	84,214	60	171,235
October	23	68,037	59	151,849
September	25	75,836	51	148,987
August	44	134,193	63	173,111
July	95	267,846	173	491,104
June	140	410,926	238	728,458
May	129	398,042	201	601,675
April	57	179,852	125	375,044
March	47	143,487	88	260,053
February	55	160,494	108	327,241

San Francisco

(Inclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922.	409	744,590	390	729,773
January	415	797,676	416	759,577
December, 1921	439	845,793	461	854,595
November	432	791,219	445	869,988
October	445	780,840	454	787,144
September	459	807,276	440	749,911
August	464	770,980	457	788,238
July	275	699,092	335	676,340
June	194	474,948	211	543,629
May	271	594,409	164	426,255
April	377	607,559	452	703,717
March	335	645,435	341	611,575
February	305	594,636	297	548,103

Baltimore

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922.	93	294,309	103	334,507
January	72	225,800	85	274,080
December, 1921.	95	281,373	102	312,528
November	78	243,934	80	253,943
October	73	249,481	78	252,098
September	85	259,788	81	260,789
August	90	251,499	87	239,482
July	116	349,379	123	365,666
June	118	359,201	133	413,410
May	109	341,731	112	341,381
April	114	320,195	119	351,950
March	111	320,238	107	316,536
February	112	380,602	93	292,881

Seattle

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	159	426,849	147	438,054
January	174	479,514	177	509,508
December, 1921.	183	528,191	180	517,996
November	177	489,119	166	454,118
October	163	431,637	157	443,447
September	168	434,912	150	387,154
August	202	519,467	192	517,253
July	158	450,050	159	436,884
June	100	331,505	110	341,278
May	109	299,777	99	282,583
April	143	339,192	163	370,070
March	149	372,824	144	369,568
February	103	295,144	101	272,136

New Orleans

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	197	582,189	201	576,973
January	225	621,483	217	603,995
December, 1921.	208	576,354	271	788,172
November	209	533,483	219	600,086
October	177	431,976	176	425,186
September	191	510,646	226	628,057
August	210	478,941	194	482,451
July	157	371,379	176	410,749
June	172	440,527	195	479,495
May	166	410,047	145	354,539
April	205	515,287	210	530,283
March	201	458,079	202	452,385
February	178	436,045	200	453,899

Boston

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	76	218,853	58	153,350
January	70	185,175	42	108,423
December, 1921.	94	239,170	61	134,039
November	62	137,585	80	180,940
October	99	229,800	67	158,695
September	88	197,208	69	144,268
August	100	280,687	63	102,032
July	98	178,403	81	115,503
June	138	211,667	100	119,945
May	122	190,148	87	98,008
April	101	217,080	71	133,952
March	99	306,454	49	113,184
February	74	260,502	46	119,847

Mobile

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	54	122,606	59	117,172
January	71	147,866	64	136,242
December, 1921	85	194,757	87	216,233
November	87	104,489	47	86,559
October	64	124,089	60	122,949
September	55	95,343	46	89,460
August	57	108,936	48	83,486
July	67	156,801	58	101,850
June	53	101,592	51	92,800
May	43	67,627	45	71,756
April	96	249,996	76	150,776
March	79	146,798	56	82,898
February	58	105,040	47	89,647

Los Angeles

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
January, 1922...	88	149,622	101	125,795
December, 1921.	94	161,393	81	137,450
November	66	42,054	90	69,275
October	68	124,682	76	123,276
September	54	128,611	45	119,275
August	50	117,775	40	106,243
July	45	144,913	34	101,581
June	27	100,411	31	100,580
May	35	98,885	26	77,036
April	32	119,049	28	71,958
March	39	99,455	33	94,380
February	74	97,252	60	93,544
January	60	111,882	86	64,844

Key West

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	84	67,080	78	68,137
January	77	69,850	77	72,321
December, 1921.	76	73,276	74	70,169
November	70	79,586	67	78,618
October	55	66,400	59	67,908
September	62	77,229	70	101,948
August	65	69,911	59	66,223
July	85	89,901	86	87,449
June	105	104,326	104	101,494
May	100	104,326	104	103,571
April	115	117,586	111	114,748
March	112	107,736	108	107,083
February	124	118,950	120	119,241

Portland, Me.

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	23	73,634	24	75,625
January	21	64,885	21	67,309
December, 1921.	29	92,777	32	99,527
November	24	37,712	12	16,794
October	13	21,191	8	13,652
September	10	15,345	12	26,224
August	13	17,192	13	14,265
July	13	15,195	11	9,597
June	15	15,723	12	12,749
May	4	8,324	10	8,885
April	17	54,804	19	64,310
March	24	75,529	25	80,107
February	20	66,422	21	73,581

Savannah

(Exclusive of Domestic)

Month	—Entrances— No. Ships	Net Tonnage	—Clearances— No. Ships	Net Tonnage
February, 1922..	9	17,568	15	40,622
January	6	11,561	9	23,601
December, 1921.	4	8,876	14	43,281
November	10	19,543	16	44,187
October	6	10,417	13	37,447
September	3	5,152	19	56,024
August	17	33,428	24	55,108
July	10	17,469	16	33,712
June	11	16,603	13	35,247
May	5	9,507	16	36,377
April	17	40,418	12	25,543
March	13	19,924	14	29,618
February	9	14,493	15	32,475

Galveston

(Exclusive of Domestic)

Month	—Entrances— No. Ships	Net Tonnage	—Clearances— No. Ships	Net Tonnage
February, 1922.	45	134,229	48	138,482
January	53	141,172	65	182,442
December, 1921	74	220,988	85	255,851
November	77	221,217	70	199,885
October	72	219,001	77	227,982
September	75	214,391	99	295,869
August	104	290,372	126	371,472
July	75	204,159	92	270,335
June	80	220,872	109	320,655
May	83	227,518	95	254,287
April	90	264,109	106	308,074
March	93	254,755	118	292,682
February	89	198,834	102	252,398

Portland, Oreg.

(Exclusive of Domestic)

Month	—Entrances— No. Ships	Net Tonnage	—Clearances— No. Ships	Net Tonnage
February, 1922..	85	232,786	82	220,175
January	85	230,682	90	244,363
December, 1921.	92	266,763	94	279,862
November	89	263,595	92	273,424
October	100	302,941	97	292,067
September	89	238,484	78	234,287
August	91	250,330	91	256,577
July	75	236,945	74	229,228
June	46	134,342	47	140,328
May	53	166,878	51	159,331
April	75	170,599	79	178,790
March	81	186,397	76	166,382
February	55	136,409	57	155,639

Marine Business Statistics Condensed

Port Traffic Record

Houston

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922...	28	27,173	30	86,028
January	32	53,779	31	92,096
December, 1921...	22	42,359	21	27,001
November	23	30,705	27	46,519
October	17	36,682	16	32,223
September	24	74,633	28	26,929
August	24	15,558	21	58,492
July	28	39,566	28	54,057
June	27	33,405	19	33,187
May	19	10,705	20	38,180
April	25	44,706	26	43,695
March	34	43,102	29	41,095
February	13	13,643	15	23,094

Port Arthur, Tex.

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
February, 1922..	73	233,148	81	250,138
January	82	261,439	77	261,004
December, 1921.	106	359,401	104	339,605
November	92	286,179	89	263,940
October	93	256,932	89	263,993
September	87	224,944	92	254,039
August	74	193,578	70	167,193
July	70	168,438	59	142,181
June	76	212,571	85	214,705
May	71	193,427	56	141,542
April	78	198,616	84	203,895
March	108	274,578	99	243,638
February	93	249,084	103	267,770

Providence

(Exclusive of Domestic)

Month	—Entrances— No. ships	Net tonnage	—Clearances— No. ships	Net tonnage
January, 1922..	11	46,093	12	50,449
December, 1921.	8	26,053	16	50,847
November	12	50,551	16	59,677
October	13	46,530	10	44,661
September	12	43,665	19	65,515
August	6	19,722	3	13,095
July	14	45,133	4	13,674
June	7	21,703	16	43,556
May	12	34,612	9	24,997
April	13	42,378	9	37,802
March	8	30,539	9	39,801
February	8	29,359	9	35,992
January	12	47,098	13	50,598

America Ranks First in Panama Canal Use

American vessels making the Panama transit in the fiscal year of 1921 were 1212 out of a total of 2892 according to the *Panama Canal Record*. These figures do not include vessels of the United States navy or other government owned or chartered vessels not engaged in commercial service and exempt from the payment of tolls. The aggregate net tonnage of these 1212 vessels, measured according to Panama canal rules, was 4,874,477, and they carried 5,179,350 tons of cargo. The nearest competitor of the United States in canal traffic was Great Britain with 970 vessels of 3,965,613 net tons, carrying 3,721,932 tons of cargo. American vessels carried 45 per cent of all the cargo passing through the canal, and British vessels 32 per cent. The continuous increase of American shipping, using the canal since it was first opened to navigation in August, 1914, is shown by the following table:

Fiscal year.	Atlantic to Pacific	Pacific to Atlantic	Total
1915.....	231	239	470
1916.....	114	124	238
1917.....	198	266	464
1918.....	224	404	628
1919.....	268	518	786
1920.....	493	636	1,129
1921.....	581	631	1,212

The low figures for the fiscal year 1916 are accounted for by the circumstance that the canal was closed to navigation by slides in the Gaillard cut from Sept. 18, 1915, to April 15, 1916. Subsequently the traffic was adversely affected by the war. Since the armistice it has grown rapidly and continuously.

The 1921 traffic moved over the trade routes shown in the following table:

	Ships	Cargo tons
U. S. coastwise, Atlantic to Pacific.....	177	698,429
U. S. coastwise, Pacific to Atlantic.....	145	673,959
East coast U. S. to west coast South America.....	129	419,994
West coast South America to east coast U. S.....	152	629,274
Europe to west coast North America.....	26	66,709
West coast North America to Europe.....	106	736,160
East coast U. S. to Far East	68	502,712
Far East to east coast U. S...	23	140,260
East coast U. S. to Australasia	13	88,789
Australasia to east coast U. S.	17	87,385
East coast Mexico to west coast North America.....	29	286,311
West coast North America to east coast Mexico.....	42	14,455
East coast Mexico to west coast South America.....	36	296,342
West coast South America to east coast Mexico.....	32	.....
East coast Mexico to Balboa	9	72,452
Balboa to east coast Mexico..	11	.....
East coast Mexico to west coast Central America.....	1	4,478
East coast U. S. to Balboa...	12	95,606
Balboa to east coast U. S....	10	.....
East coast U. S. to west coast Canada.....	9	58,846
West coast Canada to east coast U. S.....	7	32,809
Cristobal to west coast South America.....	20	2,731
West coast South America to Cristobal.....	19	15,051
Cristobal to west coast North America.....	23	29,972
West coast North America to Cristobal.....	23	14,578
East coast South America to west coast North America..	9	31,927
West coast North America to east coast South America..	3	18,941
Miscellaneous trade routes, Atlantic to Pacific.....	20	37,842
Miscellaneous trade routes, Pacific to Atlantic.....	41	123,338
Totals.....	1,212	5,179,350

The most important American trade through the canal is that from coast to coast, with a cargo tonnage of 1,399,814 carried in 323 vessels. The history of this trade is peculiar. In the first fractional year of canal traffic, Aug. 15, 1914, to June 30, 1915, it engaged 335 vessels carrying 1,846,658 tons of cargo. During the following year the canal was closed for seven months, and in the interval the vessels which had maintained a coastwise service were diverted to war trades in the North Atlantic, where they remained until the close of the war and during the era of high freight rates which followed it. It was only after the slump set in that serious attention was once more given to the development of the trade from coast to coast. It is now growing rapidly, but the figures for 1921, although they show a notable increase over those for 1920 and other recent years, still fall short of the record set in 1915. It is reasonable to assume that if the war had not arrested its normal development the coastwise trade would be far more important than it now is, and that it is capable of great expansion.

The coastwise trade is an American monopoly; but in the other trades served by the canal, American ships are in competition with the ships of foreign nations, particularly Great Britain, Japan, and Norway. In the important trade between Europe and Australasia American vessels did not figure at all, and in the trade between Europe and the west coast of South America only four American vessels passed the canal, all northbound, with 31,800 tons of cargo. In the oil trade between the Mexican fields and the west coast of South America American tankers carried 296,342 tons out of a total of 654,659 tons. With this single exception the trades in which American vessels secured any considerable tonnage had the United States either as origin or destination.

In the trade between Atlantic and Gulf ports of the United States and the west coast of South America the total southbound cargo was 933,261 tons. Of this, American vessels carried 45 per cent, British vessels 15 per cent, Japanese vessels 12 per cent, and Norwegian vessels 7 per cent. Although the trade of other nations has not yet been analyzed in detail, it is probable that the remaining 21 per cent was carried in Chilean and Peruvian bottoms. The northbound cargo aggregated 975,597 tons. American vessels carried 64 per cent of the total, British vessels 14 per cent, Norwegian 10 per cent, and Japanese approximately 5 per cent.

Between Europe and the west coast of North America there is a great preponderance of eastbound cargo. Of this, American vessels carried 55 per cent, British vessels 26 per cent, and Norwegian vessels 4 per cent. Swedish, Danish, and Dutch vessels were also operating over this route, and probably account for most of the remaining 15

per cent. Of the westbound cargo, which was relatively unimportant, American vessels carried 27 per cent, British 14 per cent, and Norwegian 13 per cent.

Of cargo moving from Atlantic and Gulf ports to the Far East, American vessels carried 41 per cent, British vessels 29 per cent, and Japanese vessels 27 per cent. Of cargo moving from the Far East to Atlantic and Gulf ports American vessels carried 32 per cent, Japanese 38 per cent, and British 23 per cent.

In the trade between the United States and Australia, British vessels had a decided advantage, carrying 71 per cent of the total outward bound cargo as against only 14 per cent in American bottoms. Of cargo moving over this route in the opposite direction American vessels carried 56 per cent and British vessels 44 per cent.

The United States shipping board owned 451 of the 1212 American vessels which used the canal in 1921. The more important private owners were: Standard Oil Co. with 128 vessels; W. R. Grace & Co., 94; Pacific Mail Steamship Co., 84; United States Steel Products Co., 53; Panama Railroad Steamship Line, 50; Luckenbach Line, 37; American-Hawaiian Line, 33; Union Oil Co., 25; Standard Transportation Co., 12; Crowell & Thurlow, 12; and Robert Dollar Co., 11.

British Use of Panama Canal Ranks Second

British shipping takes second place immediately after that of the United States in the use of the Panama canal. By British is meant imperial, since Australia, New Zealand, and Canada all contribute materially to the tonnage under the British flag. In the fiscal year 1921 approximately one-third of the whole traffic was British, figured either by the number of vessels, net tons Panama canal measurement, or tons of cargo. Accurately, 33 per cent of all vessels passing through the canal were British, 34 per cent of the total net tonnage was British, and 32 per cent of all the cargo handled was carried in British bottoms. Approximately the same percentages apply for 1918, 1919 and 1920. During the first three years of canal traffic; 1915, 1916 and 1917, British shipping represented from 41 to 45 per cent of the total. The relative decline is explained by the rapid development of American shipping during and after the war, says the *Panama Canal Record*. The following table shows the number of British vessels passing through the canal in either direction during the fiscal year since the opening of navigation and the relative importance of British shipping in the total traffic:

Year.	Atlantic to Pacific	Pacific to Atlantic	Total British	Total all flags	Per Cent. British
1915	226	239	465	1,088	42
1916	193	165	358	787	45
1917	371	409	780	1,876	41
1918	305	396	699	2,130	33
1919	306	296	602	2,025	30
1920	393	360	753	2,478	30
1921	500	472	972	2,892	33
Totals	2,292	2,337	4,629	13,276	34

In the course of the last three years there has been a gradual increase in the number and aggregate tonnage of all vessels using the canal, and a corresponding increase in tonnage under the British flag, which has maintained its relative position. Approximately the same number of British vessels pass the canal in either direction; but this applies to the aggregate trade only. Over specific trade routes as shown in the following table, there is often a marked preponderance of traffic in one direction, but the difference is sometimes on one side and sometimes on the other:

Trade routes.	Vessels.	Cargo tons.
Europe to Far East	1	6,800
Atlantic and Gulf ports U. S. to Far East	53	351,494
Far East to Atlantic and Gulf ports U. S.	19	100,429
Mexico to Far East	2	22,432
Europe to west coast South America	64	184,701
West coast South America to Europe	107	562,549
Atlantic and Gulf ports U. S. to west coast South America	49	144,789
West coast South America to Gulf ports U. S.	45	137,926
Cristobal to west coast South America	81	40,838
West coast South America to Cristobal	80	37,117
Mexico to west coast South America	14	95,660
West coast South America to Mexico	16	230
East coast Canada to west coast South America	2	.....
West coast South America to east coast Canada	3	8,095
East coast South America to west coast South America	7	3,031
West coast South America to east coast South America	1	347
Europe to west coast Central America	2	2,285
West coast Central America to Europe	3	4,203
Europe to west coast Mexico	2	2,123
Cristobal to west coast Central America	25	16,777
West coast Central America to Cristobal	30	14,792
Europe to west coast North America	33	33,564
West coast North America to Europe	46	347,133
Mexico to west coast United States	4	34,671
West coast United States to Mexico	6	.....
Atlantic and Gulf coast U. S. to west coast Canada	6	29,729
East coast Canada to west coast Canada	4	536
Cuba to west coast Canada	1	4,800
West coast Canada to Mexico	2	.....
East coast U. S. to west coast U. S.	4	.....
Europe to Australasia	69	385,849
Australasia to Europe	99	564,222
United States to Australasia	63	439,739
Australasia to United States	14	66,872
Canada to Australasia	9	47,513
Cuba to Australasia	4	23,040
New Orleans to Balboa	1	7,183
West coast of United States to South Africa	1	6,323
Totals	972	3,727,792

Five trade routes account for 81 per cent of all the cargo carried through the Panama canal under the British flag. For the period covered in the table, the most important British trade served by the Panama canal was that between Europe and Australia and New Zealand, with an aggregate cargo tonnage for both directions of 950,000. Second place was taken by the trade between Europe and the west coast of South America with 747,000 cargo tons. Then followed the trade between the United States and Australia and New Zealand, with 506,000 tons; the trade between the United States and the Far East with 451,000 tons; and finally the trade between Europe and the west coast of North America with 380,000 tons.

Following is a list of British owners who put 10 or more ships through the Panama canal during the year:

	Number
Pacific Steam Navigation Co.	299
Shaw, Saville & Albion	44
White Star Line	18
New Zealand Shipping Co.	43
F. & W. Ritson	36
Commonwealth and Dominion Line	31
Federal Steam Navigation Co.	28
C. T. Bowring & Co.	24
Edward Hain & Son	20
T. & J. Harrison	18
Robert Dollar Co.	16
Ellerman Lines	16
British India Steamship Co.	15
Canadian Government	13
Alfred Holt & Co.	13
Furness, Withy & Co. (Prince Line)	12
Standard Transportation Co.	12
Blue Star Line	10
Andrew Weir & Co.	10

A few of the principal trades are well balanced, with approximately the same number of vessels and the same tonnage of cargo moving in either direction. This is true of the trade between the Atlantic and Gulf coasts of the United States and the west coast of South America. In other cases however, there is a market preponderance of traffic in one direction. For example, there were 53 vessels from the east coast of the United States to the Orient and only 19 from the Orient to the east coast of the United States.

An almost similar preponderance was noted in the case of Japanese vessels in the trade between the eastern seaboard of the United States and the Orient; and it is apparently due to the fact vessels which go out to the Far East through the Panama canal commonly return by way of Suez. The two canals thus supplement one another, and stimulate an around-the-world trade. In the trade between Europe and Australasia there is a similar preponderance but in the opposite direction. There were 69 vessels outward bound against 99 homeward bound. It is known that some of the vessels returning via Panama go out via the Cape of Good Hope or the Straits of Magellan. In the trade between Europe and the west coast of South America there were only 64 outward bound as against 107 homeward bound vessels. Outward voyages via

the Straits of Magellan with return via Panama probably account in great part for the difference, although some vessels reach Chile from Australasia and then load nitrate for Europe via Panama.

The British company contributing most to Panama canal traffic is the Pacific Steam Navigation Co., which maintains services from the United Kingdom to South America, New York to South America, Cristobal to South America and Cristobal to Central America. This company put 299 ships through the canal during the fiscal year 1921. Services between the United Kingdom, Australia, and New Zealand are maintained by Shaw, Saville & Albion, the White Star Line, Commonwealth and Dominion Line, and the New Zealand Shipping Co. The Federal Steam Navigation Co. operates from British ports via New York and the Panama canal to New Zealand and Australia. The Nautilus Steam Shipping Co. (F. & W. Ritson) maintains a service between the United Kingdom and the west coast of South America. Some of their vessels go out by way of Magellan, but all return via Panama. T. & J. Harrison and Alfred Holt & Co. (Blue Funnel line) maintain services between Europe and the west coast of North America. The Prince line has regular sailings from United States Atlantic ports to the Far East

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties— A Record of Collisions, Wrecks, Fires and Losses

Name of Vessel	Date	Nature	Place	Damage Resulting
Aldgate	Feb. 13	Disabled	Bermuda	Boil. trouble
Arkansas	Feb. 16	Ice	Cattegat	Prop. blades broken
Afoundria	Feb. 20	Ashore	Ship Island	Undamaged
Annetta	Feb. 20	Grounded	Chester Island	Undamaged
Admiral Farragut	Feb. 20	Adrift ashore	Burrard Inlet	Undamaged
Alm	Mar. 1	Not stated	Fayal	Damaged
Atlas	Feb. 25	Disabled	Point Gorda	Lost prop. blade
Babinda	Feb. 17	Fog grounded	Key Remute pier	Undamaged
Balsam	Feb. 19	Grounded	Lough Foyle	Not stated
Bradford E. Jones	Feb. 19	Disabled	St. Thomas	Leak, & sails lost
Bella	Feb. 27	Grounded	James Point	Not stated
Clement Smith	Feb. 11	Struck object	Broad Sound	Heavy
Czarina	Feb. 12	Dismasted	At sea	Not stated
Coylet	Feb. 8	Fire	Florida coast	Abandoned
Cape Ortegal	Feb. 6	Heavy weather	At sea	Slight
City of Manchester	Feb. 16	Fire	London	Slight
Commandant	Feb. 18	Weather damaged	Norfolk	Not stated
Caldwell O. Colt	Feb. 13	Not stated	Tortugas, Fla. light	Wrecked
Canadian Navigator	Mar. 1	Disabled	Bourgues Head	Eng. disabled
Cranford	Feb. 25	Struck wharf	Charleston	Slight
Conte Rosso	Feb. 24	Disabled	Clyde	Turbines damaged
City of Miami	Mar. 1	Disabled	Havana	Lost prop. blades
Catherine	Mar. 1	Fog ashore	Baker's Island	Water in hold
Eastern Sea	Feb. 10	Heavy weather	At sea	Slight
Editor	Feb. 14	Disabled	SE. of Ambrose Lightship	Not stated
Eastern Crag	Feb. 14	Disabled	At sea	Rudder post broke
Egremont	Feb. 16	Disabled	Newport News	Lost anchor & chain
Edward R. Baird Jr.	Feb. 18	Disabled	At sea	Head sails gone
Eastern Sea	Feb. 21	Grounded	Near Masblius	Not stated
Elizabeth Rodway	Feb. 16	Steerer damaged	Barbados	Heavy
E. C. Adams	Feb. 12	Gales leak	At sea	Sails gone
Eugenia Owen Mackay	Feb. 22	Collision	Buck Creek Buoy	Leaking
Florence A. Duggan	Feb. 7	Dismasted	Gulf of Mexico	Waterlogged
Frey	Feb. 18	Fire	Boston	To fore castle
Fairfield City	Feb. 16	Hurricane	At sea	Bridge wrecked
Florida	Feb. 22	Water in hold	Christiansand	To cargo
Fulton	Feb. 2	Ashore	Dauro	Heavy
Grace & Ruby	Feb. 23	Disabled	Boston lightship	Not stated
Golden Gate	Feb. 17	Fire	Panama City, Fla.	Total loss
Grontoft	Mar. 2	Not stated	At sea	Sinks; condition
General Jacobs	Feb. 21	Not stated	At sea	Jetts. cargo
Hickman	Feb. 14	Disabled	Hamburg	Eng. damaged
Harriet	Feb. 21	Ice on rocks	Near Hay Cove	Not stated
Icotz Mendi	Feb. 12	Disabled	Fayal	Eng. trouble
Ikala	Feb. 15	Severe weather	At sea	To bow plates; leak.
Jules Henry	Feb. 11	Disabled	Key West	Machy. dis.
Joseph S. Zeman	Feb. 16	Grounded	Rockland, Me.	Abandoned
J. N. Rafuse	Feb. 20	Not stated	Off St. Johns, N.F.	Sank
Kobenhavn	Feb. 17	Disabled	Off San Francisco	Prop. broke
Kathleen Spindler	Feb. 18	Leak condition	At sea	Abandoned
Kamesit	Feb. 23	Disabled	Mississippi River	Machy. trouble
Lithuania	Feb. 14	Ice field	Cattegat	Rudder damaged
Lenape	Feb. 19	Grounded	New Jacksonville	Not Stated
Lisbon	Feb. 12	Fire	S. of South Pass	Not stated
Lowel E. Parks	Feb. 24	Hurricane leak	At sea	Abandoned
Maruba	Feb. 13	Disabled	New York	Eng. trouble
Marion G. Douglass	Feb. 14	Pumps dis.	Newport News	Water in hold
Minnequa	Feb. 12	Ashore	Martins Industry Shoals	Not stated
Moritz	Feb. 16	Gale	Craney Island	Ashore
Maruba	Feb. 17	Disabled	Newport News	Not stated
Maravi	Mar. 1	Disabled	At sea	Fuel feed plant dis.
Merrymount	Feb. 23	Loose rivets	Boston	Leak, condition
Mexico	Feb. 26	Ashore	Near Elsinore	Leaking
Maumee	Mar. 2	Fog	Charleston	Ashore
Nordhaven	Feb. 11	Disabled	Copenhagen	Machy. dis.
Norma Strong	Feb. 13	Not stated	At sea	Abandoned
Nevis	Feb. 13	Disabled	New York	Eng. trouble
Nueces	Feb. 12	Disabled	Key West	Steam pipes dis.
Nimon L.	Feb. 17	Leaking	Barbados	Not stated
Narbo	Feb. 16	Heavy sea	E. of Cape Henlopen	Disabled
Narenta	Feb. 20	Grounded	Sinclair Island	Heavy
Narbo	Feb. 22	Collision	Duck Creek Buoy	Not stated
Orla	Feb. 18	Disabled	Hamburg	Eng. damaged
Portland	Feb. 15	Lost anchor & chain	Hampton Roads	Not stated
Paulsboro	Feb. 20	Collision	Off Schuylkill River	Not stated
Parkhaven	Feb. 25	Disabled	Norfolk	Rudder trouble
Parisiana	Mar. 2	Rough sea	At sea	To cargo
Rose E. Murphy	Feb. 11	Disabled	Cape Haitien	Leaking
Romeo	Feb. 14	Fire	Near Horta	Not stated
Roxbury	Feb. 18	Fire	Eureka, Cal.	Not stated
Rose E. Murphy	Mar. 1	Fire	Cape Haitien	Slight
Rosalie Hull	Feb. 27	Gale	Charleston	Lost lumber
Roxburgh	Feb. 23	Grounded	Columbia River	Undamaged
Starcoxie	Feb. 14	Disabled	Highlands	Not stated
Springfield	Feb. 11	Fire	Portland	Slight
Sisto	Feb. 14	Heavy ice	Off St. Johns	Bow damaged
Swiftarrow	Feb. 17	Disabled	Newport News	Not stated
Selma City	Feb. 17	Grounded	Ediz Hook	Not stated
San Lorenzo	Feb. 22	Disabled	San Juan	Lost prop. blade
Susan Cameron	Feb. 16	Gale	W. of Cape Sable	Lost sails
Sudbury	Feb. 21	Disabled	Hamburg	Eng. disabled
Sally Wren	Feb. 24	Lost anchors	Near Charleston	Not stated
Selma	Feb. 20	Grounded	Pelican Flats	Not stated
Texas	Feb. 13	Grounded	Vineyard Haven Sound	Undamaged
Tenyo Maru	Feb. 17	Disabled	Shanghai	Machy. dis.
Thistlemore	Feb. 7	Ashore	New York	Heavy leakage
Vasari	Feb. 26	Disabled	Off Clifton, SI	Eng. trouble
William Page	Feb. 13	Ran afoul scow	Providence	Hole in bow
West Totant	Feb. 13	Fire	Texas City	Slight
Willfaro	Feb. 21	Grounded	North Point	Not stated
Yarbo	Feb. 22	Collision	Buck Creek Buoy	Not stated

Activities in the Marine Field

Latest News from Ships and Shipyards

New Steamers Proposed for Great Lakes

BY MYERS L. FEISER

DECISION is expected shortly as to the proposed construction of two lake passenger steamers for the Detroit & Cleveland Navigation Co., Detroit, to be operated in the Detroit-Buffalo service. Bids were taken in March for these two vessels but details as to tonnage, length, etc., were withheld until it definitely had been determined to build them. It is understood they have turbine drives. The boilers will be unusually large, being 16 feet in diameter. Completion of the two ships would result in the transferring to the Detroit-Cleveland service of two of the vessels, probably the CITY OF DETROIT III and CITY OF CLEVELAND III now on the Buffalo route. It is probable another large passenger vessel of the size and type of the SEEANDBEE may also be built.

Prospects for lake trade during the coming summer have shown a decidedly upward trend in the past few weeks. The outlook is considerably brighter than it was a year ago, the only cloud tending to make the start slow being the threatened coal strike April 1. The steel industry is operating at a better rate than it has for some time and if the rate continues yard stocks of ore will be reduced earlier than had been expected and a larger movement of ore will be hauled before the season closes. The grain trade is the only one offering immediate signs of activity. Charters have been taken for grain at from 1¾ cents for later trips up to 2¼ cents for the first trip although vessel operators generally appeared to be waiting for a higher figure.

* * *

An air diaphone to sound a group of two blasts every 30 seconds will be installed at Conneaut west breakwater light station about April 15, displacing the fog bell there.

* * *

Harbor improvements at Harbor Beach have progress so far, according to A. E. Wright, assistant government engineer stationed at that place, that they will be compleed this coming summer. The harbor has been dredged o accommodate the largest steamers.

* * *

Eighteen feet 5 inches is the loadline limit recommended for all vessels for the opening of the navigation season, according to a bulletin issued by George A. Marr, secretary of the Lake Carriers association. It is pointed out this particularly applies to harbors and channels, due to the general lowering of lake levels.

* * *

Effective upon the opening of navigation, the characteristic of the light of the Lake St. Clair lightship will be a flash every three seconds for three-tenths of a second. The light will be 230 candlepower, 35 feet above the water and visible for 13 miles. A lantern deck gallery railing is to serve as the new day mark.

* * *

As a result of a collision between the steamer WILLIS L. KING and the steamship SUPERIOR CITY on Whitefish bay Aug. 20, 1920, suit for $1,000,000 has been begun at Madison, Wis., against the WILLIS L. KING. Twenty-eight members of the crew of the SUPERIOR CITY lost their lives in the accident.

* * *

Permits issued by the Ore & Coal exchange at Cleveland for handling coal during the coming season cover the movement of 200,000 tons of coal. That was to the middle of March. Since the first of the year 24 permits had been issued.

* * *

Up to the middle of March the ARCTURUS at Cleveland, PIONEER at Ashtabula, and SHENANGO, HOOVER & MASON and C. D. BRADLEY at Lorain, were the only steamers which had taken on coal cargoes.

* * *

Making the trip by easy stages, the tug DICKINSON which recently was sold by the Great Lakes Towing Co. to Capt. B. T. Miller, Marine City, started from Cleveland March 11 for her new berth.

* * *

Students in the navigation classes conducted in Cleveland in the past winter by the Lake Carriers' association, have been licensed as follows: Masters, John A. McRea, Crassley McQuinn, and Albert Archer; first class pilots, Clarence W. Fitch, Frank King, Russell Robinson, Robert U. MacLean, George Lasky and William Martin; chief engineers, Ernest A. Anderson, Lief Urdal, and Michael J. Regan; first assistant engineers, Charles Frederick, Walter J. Brown, Vincent C. Roth, Peter Lavelle, and Kenneth MacKenzie; and second assistant engineers, Joseph J. Brandabur, James M. Garen, Walter Martin, William H. Scott, Waldemar Goerss, Carl J. Schefer, and S. A. Sharkin.

* * *

E. C. Maytham, former lake captain, died recently at his home in Medina, O. He had been identified with lake shipping for nearly 50 years. He was associated with the Maytham Tug Co. and other interests at Buffalo.

* * *

Sixteen days was the time record set by the repair yard of the American Shipbuilding Co. at Buffalo in repairing the seamer SAMUEL MATHER, damaged in the Buffalo storm last December. The work included the removal and replacing of 79 plates, putting on a new rudder and stern post and other repairs.

* * *

Capt. Ben Broderick, in charge of the Great Lakes Steamship Co.'s vessels wintering at Buffalo and who underwent an operation for stomach trouble, died late in February and was buried in Buffalo. Captain Broderick was one of the best known skippers on the lakes.

* * *

Navigation on Lake Erie between Sandusky and the islands opened Feb. 23 when Capt. John Gilbert piloted his steamer TOURIST to Put-in-Bay and Capt. John Newman his power boat MESSENGER to Kelleys Island.

* * *

Improving of the lighting of the new American channel at Port Huron, possibly with electricity, may result from the meeting in Detroit of the Lake Carriers' association's committee on navigation aids. A number of other plans were discussed. No recommendation was made for any new lighthouses.

* * *

Rail grain shipments from Buffalo during February were as follows: Lehigh Valley, 2,300,000 bushels; New York Central, 1,800,000 bushels; Pennsylvania 1,500,000; Lackawanna, 1,200,000; and Erie, 1,100,000.

* * *

Extension to the elevator of the Dellwood Elevator Co. at Buffalo is to be built by the Fegels Construction Co., Minneapolis, which recently was given a contract for the work. The improvements are to be completed by Sept. 1. They will increase the capacity by 750,000 bushels and afford rapid means of unloading lake steamers.

* * *

The United States lakes survey reports the monthly mean stages of the Great Lakes for the month of February, 1922, as follows:

	Feet above mean sea level	
Lakes	January	February
Superior	601.62	601.43
Michigan-Huron	579.32	579.23
St. Clair	573.93	573.25
Erie	571.51	571.17
Ontario	244.73	244.70

Lake Superior is 0.19 foot lower than last month, 0.33 foot lower than a year ago,0.48 foot below the average stage of February of the last 10 years, 1.05 feet below the high stage of February, 1901, and 0.67 foot above the low stage of February, 1871.

Lakes Michigan-Huron are 0.09 foot lower than last month, 0.61 foot lower than a year ago, 0.76 foot below the

average stage of February of the last 10 years, 3.49 feet below the high stage of February, 1886, and 0.07 foot above the low stage of February, 1896.

Lake Erie is 0.34 foot lower than last month, 0.68 foot lower than a year ago, 0.47 foot below the average stage of February of the last 10 years, 2.58 feet below the high stage of February, 1863 and 0.54 foot above the low stage of February, 1902.

Lake Ontario is 0.03 foot lower than last month, 0.76 foot lower than a year ago, 0.83 foot below the average stage of February of the last 10 years, 2.97 feet below the high stage of February, 1866, and 0.87 foot above the low stage of February, 1897.

In the North Atlantic

EXCURSIONS to Ireland by the United States lines will be inaugurated April 1, with the sailing of the steamship HUDSON. John J. Daly will act as special conductor of the excursion. Mr. Daly has been conspicuous in track athletics, and is known far and wide as the "Galway runner." He was a member of the United States Olympic team to the games in Greece some years ago and holds several championships.

* * *

Sale of the FORT PIERCE, schooner barge of 2097 tons, at United States marshal's sale in New York, is reported. E. C. Maxwell purchased her for $2000 and sold her to Francis S. Bushey for $14,000.

* * *

The freighter KORONA, owned by the Furness line, has been sold. The purchasers and the purchase price have not been announced, but she had been held for $70,000. She is of 1871 tons and was built in Glasgow in 1886.

* * *

Capt. A. E. England, president and managing director of the American Bahamian Steamship Co., Ltd., is contemplating establishing a service between Boston and Nassau.

* * *

What is said to be a record in the number of ships loaded and unloaded in a month at any one pier, was established in February at Commonwealth pier South Boston. The cargoes of 23 vessels amounting to more than 40,000 tons were handled.

* * *

The plant of the Winnisimmet Shipyard Inc., Chelsea, Mass., including the marine cradle railways, with several buildings, was recently sold at public auction to H. S. Winslow, Boston, for $200,000.

* * *

The Bethlehem Shipbuilding Corp., Quincy, Mass., has recently been awarded the contract for repairing the tank steamer CLEMENT SMITH. The company's bid was $63,000, for repairing the steamer's hull, and $15,700 for a new stern frame.

* * *

Preliminary work has been started on the long projected $1,000,000 state pier at Portland, Me., which is being constructed jointly by the state and the Grand Trunk railway. The Aberthaw Construction Co., Boston, has the contract for the first items of the work, principally the removal of old wharves, construction of new retaining walls and a large amount of dredging. The pier will be largely of timber construction. A feature of the work now under way is the use by the Aberthaw company of three 500-ton concrete lighters were built by the company at its own yard four years ago, but their sales value in proportion to original cost has been so small that they have never been disposed of.

* * *

The White Star line recently announced resumption of its Queenstown and Liverpool service from Boston. It has assigned the steamers PITTSBURGH and HAVERFORD to the service. The HAVERFORD is 550 feet long and 12,000 tons. The PITTSBURGH is 16,600 tons, 600 feet long, and has accommodations for 650 cabin and 1500 third class passengers.

* * *

The Eastern Steamship Lines, Inc., Boston, recently purchased from the Dimon Line, Inc., the steamers H. F. DIMOCK and HERMAN WINTER, which it has been operating in the Metropolitan line service between Boston and New York.

* * *

At the quarterly meeting of the Boston Marine Society recently held in Boston with Capt. H. L. Colbeth presiding the following were elected to membership: Capt. G. F. Waite, district agent of the shipping board; Capt. E. T. Morton, Capt. W. N. Phinney, Capt. J. T. Jermyn, Capt. C. R. Parmenter, Capt. U. L. Norton, and Capt. Alexander Cox.

* * *

A syndicate headed by Lester H. Monks, formerly president of W. A. Harriman & Co., and Harris Livermore, formerly president of the United American Lines, Inc., has purchased for a new company, which will be known as the Coastwise Transportation Corp., a fleet of seven colliers aggregating some 50,000 tons. This fleet was originally owned by the Coastwise Transportation Co., Boston, and subsequently sold to the American-Hawaiian Steamship Co., from which it has now been repurchased and restored to Boston. The Coastwise Transportation Corp has been organized under the laws of Maine, with a capital stock of $600,000. Harris Livermore is president and Lester H. Monks treasurer.

* * *

The London Steam Turbine Co., Troy, N. Y., has been recently incorporated under Massachusetts laws, and will manufacture steam turbines, and appliances, under the rights and properties of the Steam Motors Co., Springfield, Mass.

* * *

Owing to the large amount of freight booked by Rogers & Webb, Boston, for its sailings to Irish ports, the steamer EASTERN GUIDE has been substituted for the smaller vessel, EASTERN KING.

* * *

Several large schooners have recently been purchased from the France & Canada Steamship Co. by a group of Portland, Me., men headed by Capt. A. W. Frost. Included in the number are the WYOMING, EDWARD J. LAWRENCE, OAKLEY C. CURTIS, CORA F. CRESSY, and DOROTHY PALMER.

Along the Atlantic Bays

THE entire plant of the Globe Shipbuilding & Dry Dock Co. on the Patapsco river near Baltimore was sold at public auction on March 6 to Henry W. Williams, representing several creditors. The price paid was $1,050,000. Property included consisted of the real estate, plant, machinery, tools and equipment.

* * *

Included in the 13 drydocks to be offered for sale by the shipping board, will be a floating dock now in use at the Sparrows Point plant of the Bethlehem Shipbuilding Corp. This cost $2,000,000 to build and has been in effective use at the port of Baltimore.

* * *

The steamship MONMOUTH, 7323 deadweight tons, has been assigned to the Baltimore Steamship Co. as managing agents, by the Emergency Fleet corporation.

* * *

Coal exports at Baltimore in February amounted to 12,584 tons as against the January figure of 17,589 tons, and the February, 1921, figure of 84,249 tons. The month is said to be the dullest which has ever been experienced in the history of the coal trade at Baltimore.

* * *

Four vessels of the fleet of the Atlantic Gulf & Pacific Steamship Co., engaged in the Baltimore-Pacific coast trade, have been equipped with passenger accommodations. These vessels previously have been engaged only in the freight business. The vessels of this company now carrying passengers include the WEST HAVEN, CHARLES H. CRAMP, HENRY S. GROVE and LIBERATOR.

* * *

The week of Feb. 25 to March 3 was one of the best shipping periods Baltimore has had for more than a year. During the period 59 vessels entered the port, 46 of them with full cargoes, and 62 cleared. These figures compare with entrances of 39 for the same week in 1921 and clearances of 32.

* * *

Baltimore's grain exports for February reached 8,915,847 bushels as

against January exports of 7,761,905 bushels. From Jan. 1 to Feb. 28, Baltimore shipped out 16,677,753 bushels of grain in comparison with 10,591,978 bushels for the same period of last year.

* * *

Plans for Baltimore's Export and Import exposition to be held July 10 to 15, are maturing rapidly, and much interest is being shown. A number of foreign exhibits have been assured and last year's successful show is expected to be surpassed. The attendance of the 1921 exposition was placed at 90,000 persons in six days.

* * *

Several large coffee vessels are now on the way to Baltimore with full cargoes for unloading at that port. Prospects for a resuscitation of Baltimore's coffee trade are bright, and much energy is being devoted to the development of the business. Last year 8,104,324 pounds of coffee were routed via the port.

* * *

Contract for repairing the Baltimore city fireboat CATARACT, has been awarded to the Globe Shipbuilding & Dry Dock Co., by the board of awards of Baltimore. The Globe company's bid was $6888.

* * *

Indicating an improvement in general steamship conditions at Baltimore, the Cunard Steamship Co. has resumed its Baltimore and London service. The steamer VARDULIA pioneered in reopening this service when she sailed March 11.

* * *

The new plant of the American Sugar Refining Co. at Locust Point has almost reached completion, and is expected to be one of the greatest single activities aiding Baltimore's port development. An active trade in sugar imports to Baltimore will be built up immediately by operation of this plant, as well as general return cargoes to the West Indies. The plant covers an area of 15 acres and represents an outlay of $12,000,000.

* * *

Announcement has been made of the assignment of the steamship HOMESTEAD to the Black Diamond Steamship Corp. for use in its Baltimore-Antwerp-Rotterdam service. The HOMESTEAD is of 9751 deadweight tons.

* * *

Large quantities of tin plate now are moving from Baltimore to Portland, Oreg., on the steamers of the Isthmian line. The shipments are destined for the plants of the American Can Co., which makes cans for the salmon fisheries.

* * *

Chester island in the Delaware river recently figured in a number of groundings. Two of them were the WILLEARO of the Williams line and the ANNETTE of the Atlantic Fruit Co. Both were refloated with little damage.

* * *

Two additional foreign districts have now been made available for direct cargo shipment from Baltimore by recognized lines. The Atlantic Transport Co. is offering through bill of lading facilities via its American line to all cities in the Rhine valley, including Cologne, Coblenz, Strasbourg, Frankfurt and several others. Portugal and both coasts of Spain now receive shipments billed direct from Baltimore on vessels of the Baltimore-Oceanic Steamship Co. and the Red Star line.

* * *

The Vacuum Oil Co.'s tanker PAULSBORO and a scow in tow of the American Dredging Co.'s tug PILOT collided recently at the mouth of the Schuylkill river.

* * *

Walter F. Hagar died recently at Langhorn Manor, Pa. He was 71 years old and since 1872 played a prominent part in the steamship and sailing vessel brokerage business at Philadelphia. For two terms he was a director of the Philadelphia Maritime exchange and later was vice president.

* * *

Insufficient business is offered at Philadelphia to warrant allocation of tonnage for Oriental service, W. J. Love, vice president of the shipping board, recently informed George F. Sproule, director of wharves, docks and ferries at Philadelphia.

* * *

The Ward line's new servie from Philadelphia to Havana, Vera Cruz and Tampico has been formally opened with the sailing from Philadelphia of the SANTA GERTRUDIS.

* * *

The EASTERN ADMIRAL's cargo of 8633 tons of bagged grain for Russian relief is the largest tonnage of sacked grain shipped out of Philadelphia since the war. She sailed recently for the Baltic sea via Falmouth.

* * *

J. H. Devereux Jr., formerly in the New York offices of Norton, Lilly & Co., has been made assistant general manager of the Philadelphia offices of the company.

* * *

Diesel engines are being installed in the United American line's new steamship MISSOURIAN at the yards of the William Cramp & Sons Ship & Engine Building Co.

* * *

The first shipment of British Columbia pulp to reach Philadelphia in some time recently arrived aboard the EDGAR F. LUCKENBACH. The cargo included 2720 bales of pulp.

* * *

The steamship KERHONKSEN, now at Hog Island, has been assigned to Moore & McCormick for service between Philadelphia and Irish ports, replacing the EASTERN TEMPEST.

* * *

Navigation has been opened on the Delaware & Raritan canal from Bordentown to New Brunswick, N. J.

* * *

Harry S. Sharp has resigned as vice president and treasurer of the Earn Line Steamship Co.

* * *

The French steamship TEXAS arrived at Philadelphia recently with a cargo of potash, the second since the war.

From the South Coast

PRELIMINARY surveys for an anchorage between Craney island and Norfolk, Va., will be made by army engineers if congress adopts recommendations of the house rivers and harbors committee contained in the rivers and harbors bill reported to the house. The new anchorage is one of a number of harbor improvements on Virginia waterways for which the bill would provide. Other Virginia projects for which surveys are asked include the advisability of improving the Assateague anchorage with a view to establishing a harbor of refuge, as well as the following: Hoskins creek, Essex county; Lewis river and Chincoteague island, Mud creek, Lancaster county; Poscatazay creek, Essex county; channel connecting York river with Black creek to Slaights wharf; Mattox creek and Mulberry creek, Lancaster county; Onancock river; Appomatox river up to Petersburg, and Mattaponi river from Walkerton to Aylett.

* * *

Gulf interests have sold the sailing ship EDWARD SEWALL to the Alaska Packers' association for its Alaskan fleet. She was loaded with coal, towed the the Panama canal and from there sailed for San Francisco.

* * *

The Norwegian steamer ARGENTINA, which has been sold to the Luckenbach line and renamed the JACOB LUCKENBACH, sailed recently from Mobile on her initial trip in the Luckenbach service. She was bound for San Francisco from where she will be engaged in intercoastal service between Atlantic, Gulf and Pacific ports.

* * *

Doherty & Co. have obtained control of the Carson oil terminals at La Rose, a suburb of New Orleans, and have announced their intention of making large developments. The Carson terminals were operated under the name of the Petroleum Import & Export Co. which in the last year built plants worth $3,000,000.

* * *

The wooden steamer THOMAS L. WAND was purchased at Galveston recently by John C. Ogden, San Francisco. The terms of sale were private.

* * *

The steamer AFOUNDRIA, Hamburg and Bremen for Gulfport, recently went ashore at Ship island, near Mobile, and was released with slight damage by shipping board tugs.

* * *

Fire in the engine room of the steamer WEST TOTANT delayed her only a short time at Texas City and she proceeded to Liverpool.

* * *

The Camp Johnson Salvage Co. has purchased the schooner BAGDAD from the Jacksonville Forwarding Co., Jacksonville, Fla.

* * *

If congress accepts the recommendation of the house committee for a re-

duction in navy fuel appropriations, the coal trade at Hampton Roads would not be seriously affected by the change, although movement would be curtailed, since practically all of the coal used by the Atlantic fleet is shipped from Hampton Roads. In normal times, the navy takes about 100,000 tons of coal from Hampton Roads a month.

* * *

Despite the fact that it was the shortest month, February was the best, so far as the movement of tonnage is concerned, that Hampton Roads coal piers have had since August of last year. Total dumpings amounted to 1,099,378 tons, which is more than 150,000 tons ahead of the January figure of 937,664 tons and is also well above the record for February of last year when dumpings of 1,026,913 tons were reported. The increased tonnage is ascribed to the fact that a heavier coastwise movement was started by the prospect of a miners' strike on April 1.

* * *

Although the rivers and harbors committee of the house has received a recommendation from the board of river and harbor engineers that the government take over the Dismal Swamp canal if it can be purchased for $500,000, the committee has not held any hearing on the subject since receiving this recommendation and did not include any reference to the matter in the general bill which the committee reported March 3.

* * *

War time precautions recently were revived at Mobile when the steamship CAROLYN arrived from North Atlantic ports with a cargo of dynamite, refined glycerine, nitrocellulose, shell paper, cordite, refined saltpeter and smokeless powder.

* * *

The 1513-net ton steamer NORMA recently cleared from Mobile with a full crew of 30 men recruited at that port. She was bound for Cienfuegos, Cuba. She formerly was operated in the fruit service at Mobile and New Orleans but for 15 months has been laid up at Twelve Mile island. She has been rechartered by the American Fruit Co.

From the Northwest

TRANSPACIFIC Steamship lines, the railroads and dock operators at Seattle have reached an agreement under which Seattle is made a free port to the shipper. Wharfage and handling charges amounting to $1.30 per ton will be absorbed equally by the ocean and rail carriers. This arrangement frees the shipper of all charges. On cargo consigned to Seattle, the steamship lines have agreed to pay the handling charges and half of the wharfage leaving a charge of 25 cents per ton against local freight. In addition to these concessions the transportation companies have agreed to extend the free time in Seattle piers from 10 days to 12 months.

* * *

Extension dredging operations in the outer harbor at Victoria, B. C., are planned for the near future. The plan is to provide a depth of 40 feet at low tide. A present, a minimum of 29 feet exists in places and several of the larger vessels now on Pacific routes have had difficulty in entering and leaving this harbor.

* * *

One of the fastest of recent voyages from Atlantic ports was made by the steamer HARRY LUCKENBACH which reached San Francisco 17 days out from New York, including a short stop at San Pedro.

* * *

Business at the Port Dock No. 1, Tacoma, has been so heavy that the port has had to utilize other piers. At present, 9,000,000 feet of lumber are stored at the port terminals awaiting shipment and notices have been issued refusing further cargo until the existing congestion is relieved. The port is proceeding with extensions which will not be completed for some time.

* * *

Lumber shipments from Pacific northwest mills to Atlantic coast markets via the Panama canal increased 425 per cent in 1921 compared with 1920, the movement growing from 49,706,591 feet in the latter year to 221,404,483 feet last year. The report for 1921 shows that Japan purchased 378,382,519 feet as against 78,557,036 in 1920. The total water shipments of lumber from Northwest ports for 1921 and 1920 respectively were 1,963,193,482 feet and 1,840,791,139 feet.

* * *

The best record for speed on a transpacific voyage by an American vessel was recently hung up by the shipping board liner PINE TREE STATE of the Admiral line, which negotiated the 4260 miles between Yokohama and Victoria, B. C., in 8 days, 19 hours and 30 minutes. This feat is within one hour of the best record which is held by the C. P. R. Liner EMPRESS OF RUSSIA made in 1914. The PINE TREE STATE had a large shipment of silk which arrived in New York in 13 days, 17 hours and 10 minutes from Yokohama. The special train from Seattle to New York made the run in 99 hours 10 minutes making the total time by steamship and rail 12 days, 22 hours, 40 minutes.

* * *

The former plant in the Willamette Iron & Steel works at Portland, Oreg., is to be remodeled into a unit of the port's public terminals. This work will cost nearly $50,000.

* * *

Aboard the shipping board steamer ELDRIDGE arriving at Seattle from the Orient were scores of rare birds imported from China, including 200 bamboo partridges, a bird absolutely new to the west coast. These birds and a rare mountain sheep were brought in for the state department of game.

* * *

Electrification of all the dredges of the port of Portland is under consideration and plans to this end are being prepared. Difficulty in obtaining a steady supply of fuel led to the proposal to change from steam to electricity.

* * *

Bids will shortly be asked at Vancouver, B. C. for the superstructure of the new pier C, the excavation and fill for which were completed by the Canadian Pacific last year.

* * *

The DOLLY C, a 76-foot tug, was recently launched at a Puget Sound yard and is now being equipped with a 200-horsepower diesel engine. She will have electrically driven auxiliaries including towing machine and anchor hoist. Several other diesel powered tugs have recently proved successful in these waters.

* * *

Several Oregon newspapers have contracted to purchase their newsprint abroad and two motorships will shortly bring the first consignments from Norway, discharging at Portland, Oreg.

* * *

The crews of the American steamships ABERCOS and ELDRIDGE have been officially thanked for saving the lives of 10 Japanese fishermen whose vessel was wrecked in the north Pacific in September, 1921. The survivors drifted for 10 days in an open boat before being picked up by the ABERCOS. Later they were transferred to the ELDRIDGE on which they proceeded to Japan.

* * *

The public dock commission at Portland, Oreg., has asked the various steamship lines to absorb wharfage and handling charges on overseas cargoes to place Portland on a par with Seattle.

* * *

First-class passenger rates between Seattle and oriental ports have been cut approximately 30 per cent by the Nippon Yusen Kaisha which is removing its large liners from that service. The new rates are said to be based on the difference in size and accommodations between the vessels of this line and its competitors. Other transpacific services have announced that they will make no immediate changes.

* * *

The General Steamship Corp. has returned to the shipping board four government freighters with which a regular service to Australia has been maintained for more than a year. In lieu of the American vessels, the general Steamship Corp. has accepted the Pacific agency for the Transatlantic Steamship Co., Gothenberg, Sweden, and will inaugurate a regular monthly service to New Zealand and Australia with Swedish vessels.

* * *

Increased interest in trade with Siberia is indicated by the number of parties which are planning to invade the northern Asiatic coast during the coming season.

* * *

The Hudson Bay Co. will dispatch two trading vessels from Vancouver, B. C., to the Canadian Arctic while several other expeditions will be outfitted at both Vancouver and Seattle.

* * *

The strike of Chinese seamen at Hongkong has assumed serious proportions and shipping has been seriously hampered. Recently it was reported that 200 deep sea vessels were idle at Hongkong awaiting crews. The Chinese are

demanding a 40 per cent increase in wages due to the continued high cost of food. Some of the companies have replaced Chinese with Filipinos but the difficulty is still far from settled, according to report.

* * *

The first full cargo of flour dispatched from the north Pacific to the Orient in several years has been loaded at Portland, Oreg., by the Norwegian steamer GJORDISTAN which is bound for Dairen, Manchuria.

* * *

W. R. Grace & Co. have sold the motorship SANTA FLAVIA to Capt. H. W. Crosby, Seattle, who will use the vessel in connection with Alaskan cannery operations. The SANTA FLAVIA is a wooden essel built in 1917 at Aberdeen, Wash., at a cost of $358,000.

* * *

Because of uncertainty as to when joint tariffs and through rates on the government's Alaskan railroad will be approved, Alaskan merchants have been advised not to delay their season's purchases.

* * *

An issue of $244,000 worth of bonds has been sold by the port of Seattle, the proceeds of which will be used to complete Smith Cove Terminal Pier B.

* * *

Pacific coast owners have placed in effect a reduced rate of wages on steam schooners the cut ranging from 10 to 20 per cent. First mates are cut from $155 to $140 and others in proportion. Able seamen will receive $65 under the new scale.

* * *

The port of Portland, Oreg., has bid for three wooden hulls which it is planned to use as barges for moving coal to Portland to equalize the cost of bunkers at that port.

* * *

Increased operations at Alaskan fish canneries during the coming season will result in the employment of more men than in 1921. Several canneries which were closed last season will resume this year.

* * *

The court of appeals has decided that Emil Hoof may sue for $19,000 personal damages due to a fall from a ladder while he was employed on the steamer CLIO, at Bellingham, Wash. The case was originally nonsuited on the grounds that although the vessel was launched she was not in commission, hence admiralty law did not apply.

* * *

Capt. John Alwen, master of the freighter WEST HARTLAND which collided with and sank the passenger liner GOVERNOR off Port Townsend, Wash., last April has been completely exonerated of all blame, by a federal court decision. Following the mishap, Captain Alwen was cleared by the local inspectors. Later the supervising inspector of the district opened the case of his own volition and he found Captain Alwen at fault, suspending his license for two years. The master appealed to the court which held that the supervising inspector had no jurisdiction in the case except on appeal.

* * *

Preliminary work is being done at Portland, Oreg., on the construction of a $2,000,000 freight terminal. This will be built on Guild's lake for the use of all the railroads entering the port. Extensive filling and dredging contracts are now being carried out. The terminal will be used as a break-up yard for all freight handled by the various railroads.

* * *

The seven former German sailing vessels, interned in Mexican ports during the war and recently purchased by Robert Dollar have been renamed JAMES DOLLAR, WILLIAM DOLLAR, JOSEPH DOLLAR, ALEXANDER DOLLAR, JANET DOLLAR, DAVID DOLLAR and MARY DOLLAR.

* * *

Plans are being completed by the coast and geodetic survey for surveying the bottom of Willapa harbor from the entrance to the mouth of the Willapa river. The work likely will be done during the early spring. It is many years since this channel was surveyed by the government and increasing commerce has emphasized the need of new data.

On Californian Shores

FOR the first time in 15 years, a rate war has been started among the drydock companies around San Francisco bay. A reduction of 10 to 20 per cent in rates, inaugurated by the Hanlon Shipbuilding Co., has been met during February and March by still further reduction by four other companies operating in that section. The Moore Shipbuilding Co., announced it will continue to cut rates "to meet all competition." Drydock rates were standardized about 15 years ago at the request of the marine insurance companies, and have been maintained without a break until now. The reduction by the Hanlon company was made in expectation of getting the business of the Alaska Packers' association which was preparing to clear about 25 ships for Alaska. The Moore organization previously had handled the drydock work for this fleet, amounting to 15,000 to 20,000 tons a year. The Moore yard has five drydocks in Oakland; the Bethlehem Shipbuilding Corp has five in Alameda and San Francisco; Barnes & Tibbetts have two in Alameda, and the Union Construction Co. has one at Oakland.

* * *

The Oceanic Steamship Co. has lost its fight to recover taxes paid into the California state treasury in 1914, on the franchises held to operate a steamship line. The state supreme court on appeal refused to set aside a decision of the superior court that the taxes stand. The state's authority to levy and collect the tax was fully upheld by both courts. These taxes amount to approximately $120,000.

* * *

Astoria, Oreg., has been named a port of call in the Matson Navigation Co.'s freight and passenger service between San Francisco and Hawaii, via Puget sound. The steamer LURLINE is the first vessel to call at Astoria.

* * *

The motorship MOUNT BAKER, has been purchased by Frank B. Peterson from Gaston, Williams & Wigmore, Inc., New York. The ship is now at Houston, Texas, but is to be brought to San Francisco and used in the Alaska fisheries service of the Frank B. Peterson Co. She was built by the Ballin Shipbuilding Corp. at Portland, Oreg., in 1918, at a cost of $500,000 and is of 3000 gross tons.

* * *

The fleet of the Alaska Packers' association will leave San Francisco bay about March 15. There will be at least 25 vessels in the fleet this year, with combined crews of between 1000 and 1200 men.

* * *

The Alaska Packers' Association has purchased the ship ARAPAHOE from the shipping board. The ship is in New York, and will not be available for service in the fisheries this year. The ARAPAHOE is one of the fleet of sailing vessels purchased from the shipping board by Victor S. Fox, and afterward returned to the board. She was built in Glasgow in 1892, and is of steel construction, 2163 gross tons, 276 feet long, 40 feet beam and 24 feet deep. She is the second sailing ship bought by the Alaska Packers' the other one being the EDWARD SEWALL.

* * *

The Ocean Motorship Co., San Francisco, has made Oakland a regular terminus and port of call for its three motorships one of which, the BABINDA, inaugurated the service late in February. The company is engaged in coastwise traffic.

* * *

Withdrawal of the General Steamship Corp. from the service out of San Francisco to Australia, via Seattle, and the return to the shipping board of four vessels which had been on this run recently was announced. The shipping board immediately announced the ships had been allocated to Swayne & Hoyt, and that they would continue in service between San Francisco and ports of the Antipodes. The four vessels are the WEST MAHWAH, WEST HENSHAW, WEST ISLIP and HOLLYWOOD. Withdrawal of the General Steamship Corp from the Australian trade will have no effect on its operation of shipping board steamers between San Francisco and the ports of the west coast of Central and South America.

* * *

The Pacific American Steamship association has adopted resolutions endorsing the activities of the National Merchant Marine association, which met in Washington March 3, for the purpose of working for national legislation for the development of the American merchant marine.

* * *

The report of the Standard Oil Co. of California shows production of crude oil by all companies in that state for the month of January decreased 9723 barrels daily under that of December, 1921. Daily production for January is reported as 315,755 barrels, and daily

shipments as 278,251 barrels, an increase of 2307 barrels over the average daily shipments for December.

* * *

Although officials of the Luckenbach line have refused to affirm or deny the report current in shipping circles that they are planning the establishment of passenger service in intercoastal traffic in competition with the Pacific Mail. Steamship Co., announcement is made that the passenger accommodations will not be removed from the steamer ARGENTINA, recently purchased by the line from Norwegian interests and renamed JACOB LUCKENBACH.

* * *

The Holland-American steamer NOORDERDJIK, which reached San Francisco late in February, inaugurated the Pacific coast-European service of that line early in March.

* * *

The Pacific Mail Steamship Co. is rapidly constructing its $400,000 freight and passenger terminal in San Pedro, the port of Los Angeles. The terminal, to be completed in May, will be the largest terminal at the southern California port, with the exception of the Standard Oil Co. dock. Special attention is being devoted to the passenger section of the terminal.

* * *

At Oakland, Cal., work has been started on the new plant of the American Petroleum Corp. at the Parr terminal. The oil terminal will be in operation shortly. The buildings include an office, warehouse, 2-story manufacturing plant, four storage tanks and spur tracks laid to connect these with the transcontinental railroad lines. The corporation will bring to this plant kerosene and lubricating oils and repack them for direct shipment in intercoastal and foreign steamships.

* * *

The Crowley shipyards in Oakland recently was awarded the contract for reconditioning the steamer SUPPLY, by William Taylor and other interests, owners of the vessel. The bid of the Crowley yard was $38,000 and the work includes boiler and engine repairs and other work below decks. The steamer will lead cargo at Oakland for Philippine island ports, when repairs are completed.

* * *

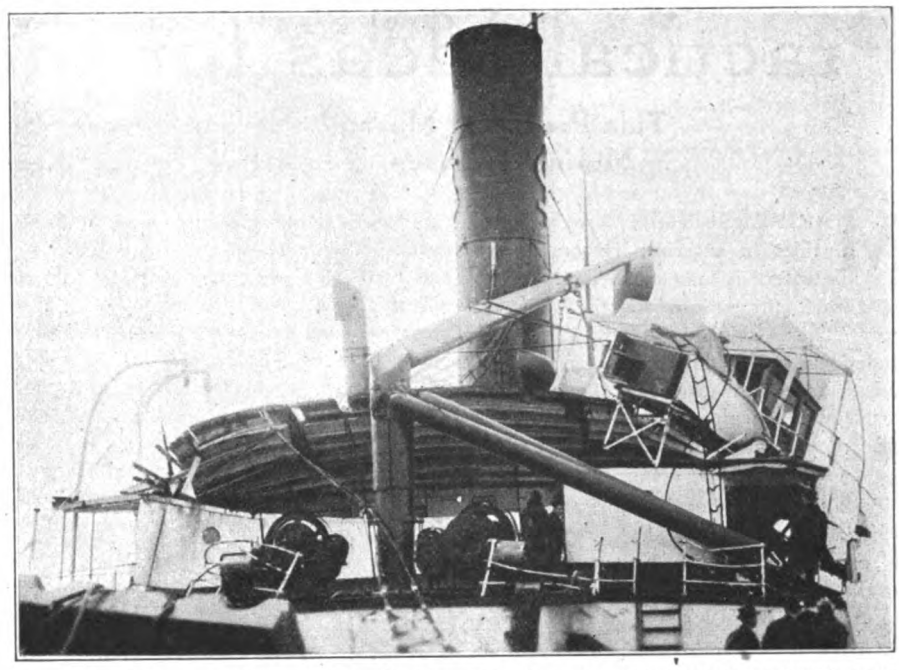
Revival of oil-consuming industries in China, Japan and the Straits Settlements was announced with the sailing of the ANATINA which carried 6800 tons of oil and five other tankers which followed her, the ADNA, AKERA, BUCCINUM, CAPSA and BRITISH LIGHT.

* * *

The Alaska Packers' association has purchased the 4-mast ship EDWARD SEWALL, from the Texas Oil Co. represented in San Francisco by McCormick, McPherson & Lapham. The ship is one of the largest sailing vessels under the American flag, being of 2916 net tons, 332 feet long and 45 feet 3 inches beam. She was built at Bath, Me., by A. Sewall & Co., in 1899.

* * *

The last of five ships built by the Union Construction Co. Oakland, Ca. for the coastguard service of the United States, was turned over to the government Feb. 17, when the tug SHAWNEE was officially inspected and accepted. The SHAWNEE is a 1000-horsepower oil burner, with a speed of 12.7 knots. She is 158 feet over all, with a beam of 30 feet and depth of 18 feet, and a displacement of 850 tons. The tug will be stationed at the foot of Clay street, Oakland, with Lieut. C. F. Howell in command.



After suffering severe damage in a terrific storm 700 miles west of Cape Flattery, the British steamship BESSIE DOLLAR returned to Victoria, B. C., for repairs. The freighter was bound from British Columbia for Oriental ports with a cargo of general merchandise and lumber, much of the latter on deck. Waves swept the vessel doing extensive deck damage. The mainmast was broken and fell over the superstructure alongside the funnel. The midship bridge was wrecked and the master's cabin was shifted to one side. A fresh water tank broke adrift and created havoc on deck. Lifeboats were carried away and stanchions bent and broken. Captain Ridley was severely injured. Some of the damage may be seen in the accompanying picture. On a call for bids, Yarrows, Ltd., Victoria, submitted the lowest tender, $38,400. The contract has not been awarded as the owners are considering making temporary repairs at a cost of $15,000 and doing permanent work in the Orient.

* * *

Contract for converting the steamer GABRIEL, recently purchased by Oliver J. Olson, into an oil burning lumber carrier, was let to the Moore shipyards at Oakland, and to Bowes & Andrews, the latter to do the hull work and the former the interior conversion. The bid of the Moore plant was $8540, and that of Bowes & Andrews $7490.

* * *

Direct passenger and freight steamship service between Los Angeles and Honolulu, will be started in June by the Los Angeles Steamship Co., according to announcement by Capt. Leb Curtis, who recently returned from an inspection of terminal sites in the Hawaiian islands. The 10-day service between the Californian port and the islands will be maintained by the former German steamers AEOLUS and HURON, which have been allocated to the company by the shipping board.

* * *

At the solicitation of the Green Coffee association of San Francisco, the Pacific Mail Steamship Co. has put the steamer POINT JUDITH in the Central American service with a view to expediting the movement of green coffee to the United States. This steamer has been idle since last June, when she was withdrawn from the Baltimore-San Francisco service. Another steamer the POINT BONITA, also has been requisitioned for the coffee service from the Champerico district by the Pacific Mail.

* * *

One of the largest sailing ships in the world, the 5-mast Danish auxiliary schooner KOBENHAVEN, arrived in San Francisco a short time ago consigned to the East Asiatic Co. as agent. The KOBENHAVEN was in command of Capt. Juel Bockdorff, and, in addition to 5000 tons of cargo, carried a number of cadets who are training for the Danish merchant marine.

* * *

The Toyo Kisen Kaisha expects to be in its new home at 551 Market street San Francisco on or before April 1. The building is of two stories, and, with the exception of one store, both floors will be used by the steamship company. The company will occupy the building under a 10-year lease.

* * *

Capt. A. C. Wilbers, master of the ship MUSCOOTA, formerly the German ship OTTAWA, owned by the Fox Shipping Co. has bought the vessel at auction in Australia for $25,000 when the indebtedness of the craft made it necessary to liquidate. The Fox company went into bankruptcy in New York, while the MUSCOOTA was at sea.

* * *

Officials of the Waterfront Employers' union, and the Longshoremen's association of San Francisco, mutually agreed, in February, to a reduction in the wages of stevedores. The straight-time pay was reduced from 90 to 80 cents an hour, while overtime was cut from $1.35 to $1 an hour. The reduction goes into effect March 1, and affects about 3500 men.

* * *

Ocean gong vessels, river steamers and ferry boats of more than 50-ton burden operating in California, unless a part of railroad transportation service, are free of taxation, according to an opinion given early in March by U. S. Webb, state attorney general, to the state board of equalization.

Practical Ideas for the Engineer

Tide Predicting Machine Prevents Errors—Submarine Drive —Marine Greases—Ventilating Screen Keeps Out Water

MARINERS depend largely upon tides in entering harbors where water is not sufficiently deep to allow entrance when the tide is low. The United States coast and geodetic survey publishes books of tide tables, issued to mariners all over the world, and all ship masters depend upon these books as much as upon charts, lights or beacons.

To figure out the tide for any given place, for any given time, requires of an expert nautical mathematician many hours of hard labor, and his work must be checked in order to insure against any errors. Yet in spite of all precaution and care, errors will occasionally crop up and such errors may cause the grounding or wrecking of a vessel.

However, one of the most remarkable machines ever invented is now used almost exclusively by the coast survey to do this work. It foretells in advance the time and height of the tide for any station for which it is set, for any future time desired. It does this with absolute accuracy in the space of a few moments, when it formerly took hours for an expert computer to do the work. The books of tide tables are now prepared with little difficulty and with never an error of the slightest kind.

The machine, as illustrated, is very complicated in appearance, but works easily and one man can operate it. It is without doubt one of the most remarkable and useful inventions for the benefit of mariners that was ever perfected. The machine seems to work with such uncanny perfection that it is called "Old Brass Brains" by the employes of the coast survey. The machine was invented by two employes of the coast survey, who worked for many years before they succeeded in perfecting it.

New Drive for Submarine

A new type of submarine motive plant, comprising a combination of gas and electric propulsion, will be installed in three American submarines of the V-type, two of which have been laid down at the Portsmouth, N. H., navy yard. The submarines will be of 2025 tons, measuring 300 feet in length and will be equipped with electric engines of 6500 horsepower. They are designed for a surface speed of 21 knots and a submerged speed of from 9 to 10 knots per hour. The 12 engines for the three submarines are said to have cost approximately $3,000,000. The vessels will be able to operate for a month away from their base. The crew of each of the vessels will include four officers and about 50 men, an increase of 20 men over the underwater craft now in the United States service. Each will be equipped with one 5-inch gun, designed to remain in the water when submerged. Forward will be four torpedo tubes and aft two others, all of the 21-inch size. The submarine will be completed in 1923.

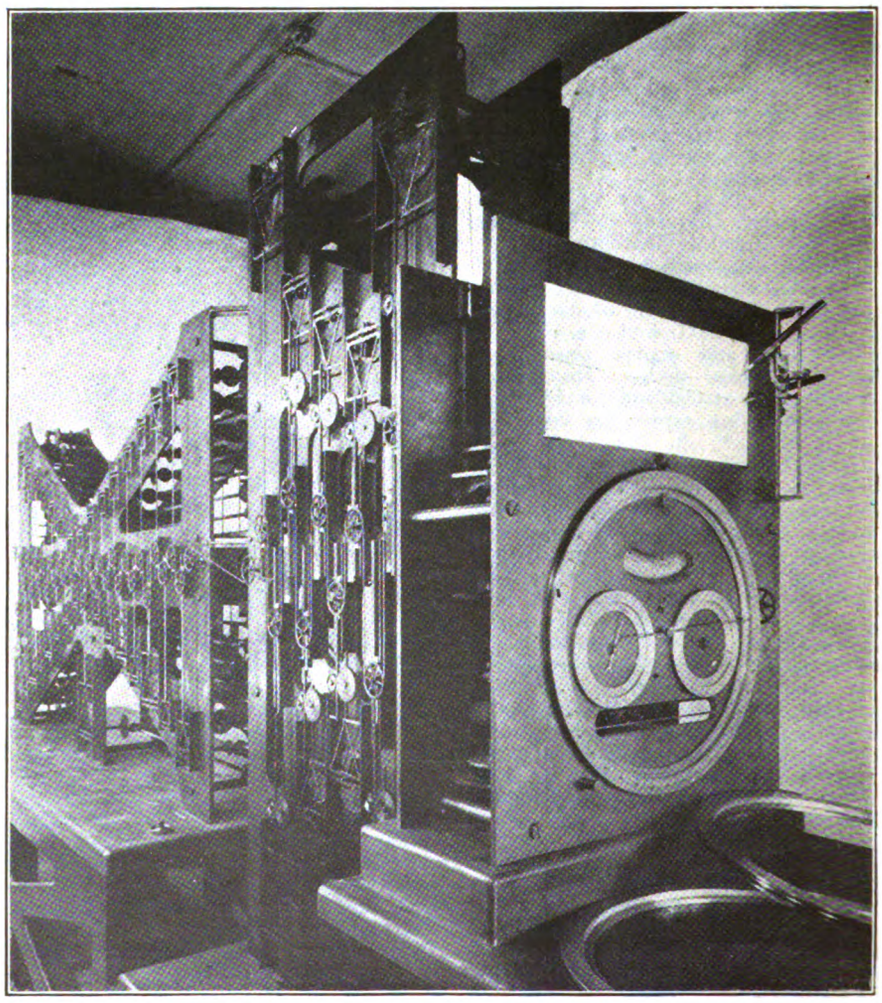
The U. S. S. DOLPHIN, tied up at the Charlestown, Mass., navy yard for the past three months has recently been sold to the Ammunition Products Co., New York for $10,600. The vessel was the original member of the "white squadron" and for many years was the official boat of the secretary of the navy. She was built at Philadelphia and launched in 1884.

Grease In Marine Use

Greases are used for the lubrication of bearings or other rubbing surfaces where a semisolid or plastic fluid will stay in place and gradually feed down its lubricant to better advantage than would a liquid. The Vacuum Oil Co. in a recent statement points out that grease is preferable to oil as a lubricant on loose bearings or gears subjected to frequent shocks, which would tend to destroy the oil film.

Grease is preferable to oil as lubricant where bearings must be supplied with a small quantity of the lubricant which will last a long time.

Grease also has advantages over oil for bearings subjected to relatively



COMPUTING MACHINE BETTER KNOWN AS "OLD BRASS BRAINS"

high pressures and running at low speeds.

Each type and consistency of grease is produced to meet and satisfy definite operating conditions. The use of a hard grease where soft grease should be employed is as objectionable as the use of a heavy-bodied oil where a light one should be employed. It is of utmost importance that the grease be correctly selected for the work it has to do.

Next in importance to correctly selecting a grease is the correctness of its application. This will be governed and limited somewhat by the bearing construction or the type of cup provided. Heavy consistency hard greases should not be used in compression grease cups and soft greases should not be used in bearings designed for packing with grease in contact with the revolving shaft.

Marine machinery on which grease is commonly but not invariably used, may be grouped in three classes:

(1) Tunnel bearings.

(2) Bearings of auxiliaries including deck machinery, such as steering engines or hoists, windlasses and winches, boiler and engine room equipment, such as pumps, fans, blowers, coal and ash handling equipment and the valve gear rocker arms, lever joints, etc., on main engines, lighting engines, refrigerating machines, air compressors, etc.

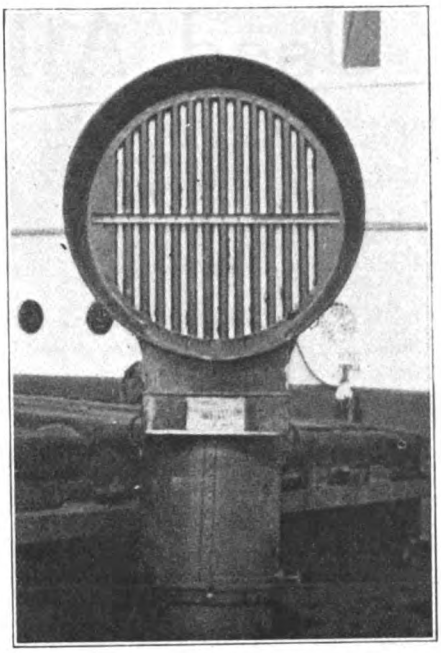
(3) As a gear lubricant or cable dressing for the gears of hoists, windlasses, coal and ash handling apparatus and for the lubrication and preservation of wire ropes, chains and cables.

Screen Keeps Water Out and Lets Air In

Approval has been given by officers of transpacific steamships to a newly patented ventilator screen, which it is claimed, solves the problem of keeping water out of cargo holds while permitting the constant passage of air. This device is the patented invention of Theophilus M. Brown, Seattle.

The screen, which fits over the bell of the ventilator is composed of three series of flat bars, with flanges extending inward from the outer two rows of bars and in both directions from the center row. These flanges extend beyond each other resulting in an air passage similar to a double *S*.

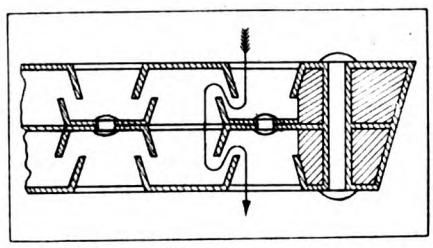
Experiments with this screen, which has been installed on several transpacific liners, have been pronounced entirely successful. On several occasions a stream of water from a hose has been directed against the screen and it is said the water did not penetrate into the ventilator. Extremely bad



VENTILATOR SCREEN IN SERVICE

weather, with spray and water constantly passing over deck, has subjected the device to severe tests but various ships' officers and cargo surveyors have given their hearty approval to the screen.

The invention is expected to appeal particularly to insurance companies for its adoption, it is claimed, will eliminate damage to cargo by seat. Under ordinary conditions, during bad weather at sea, it is necessary to close ventilators to prevent the entry of water but this



SECTION OF SCREEN

screen is designed to keep cargo holds constantly ventilated and thus remove any danger of damaged cargo by either outside water entering or by sweat.

Shows Crew Wages Higher

Government figures show that the wages of the crew of a 7500 deadweight ton coal burning steamer are 50 per cent greater for an American than a British vessel, with the pound sterling converted at $3.73, and that the wages per man are not alone higher, but a larger number are used, particularly in the engine room. Wages make up about one sixth of the total operating cost of an American vessel, with 16½ per cent fixed charges based on a $50 per ton valuation.

Assigned Shipping Board Vessels

WEST MAHOMET, 8573 tons, assigned United American Lines, Inc., managing agent.

RADNOR, 11,572 tons, assigned Barber Steamship Lines, Inc., managing agent.

PATRICK HENRY, 12,500 tons, assigned Tampa Inter-Ocean Steamship Co., managing agent.

JACONA, 7643 tons, assigned A. H. Bull & Co., managing agent.

ANACORTES, 7503 tons, assigned Baltimore Steamship Co., managing agent.

NORMA, 4310 tons, chartered bareboat basis, Atlantic Fruit Co.

LAKE FERNWOOD, 2875 tons, chartered bareboat basis, Atlantic Fruit Co.

LAKE COMO, 2875 tons, chartered bareboat basis, Atlantic Fruit Co.

LAKE WINTHROP, 3310 tons, chartered bareboat basis, A. H. Bull & Co.

NISHMAHA, 9419 tons, assigned Lykes Bros., managing agent.

JANELAW, 9415 tons, assigned Lykes Bros., managing agent.

MOSELLA, 9467 tons, assigned Lykes Bros., managing agent.

WEST SEGOVIA, 8627 tons, assigned Trosdal, Plant & Lafonta, managing agent.

EASTERN PILOT, 4905 tons, assigned Harriss, Magill & Co., managing agent.

WEST CAMAK, 8584 tons, assigned International Freighting Corp., managing agent.

OLD NORTH STATE, 13,075 tons, assigned United States lines under special agreement.

BLUE HEN STATE (new steamer), 13,000 tons, assigned United States lines under special agreement.

WEST GAMBO, 8554 tons, assigned International Freighting Corp., managing agent.

GRANITE STATE, 13,098 tons, assigned United States lines under special agreement.

MONMOUTH, 7323 tons, assigned Baltimore Steamship Co., managing agent.

EASTERN KNIGHT, 10,550 tons, assigned Barber Steamship Lines, Inc., managing agent.

KERHONKSON, 7433 tons, assigned Moore & McCormack Co., Inc., managing agent.

MINNEQUA, 7825 tons, assigned Tampa Inter-Ocean Steamship Co., managing agent.

WESTERN SPIRIT, 8800 tons, assigned Black Diamond Steamship Corp., managing agent.

HOMESTEAD, 9751 tons, assigned Black Diamond Steamship Corp., New York, managing agent. Baltimore-Antwerp-Rotterdam service.

WEST HARDAWAY, 8625 tons, assigned Waterman Steamship Co., Mobile, Ala., managing agent. Pensacola-Gulfport-Mobile-Hamburg-Bremen service.

BEARPORT, 9422 tons, assigned Struthers & Barry, San Francisco, managing agent. San Francisco-Orient.

SCOTTSBURG, 12,249 tons, assigned Barber Steamship Lines, Inc., New York, managing agent, North Atlantic-Far East service.

EASTERN TRADER, 12,975 tons, assigned Tampa Inter-Ocean Steamship Co., Tampa, Fla., managing agent. Gulf-Far East service

GLEN RIDGE, 7433 tons, assigned Baltimore Steamship Co., Baltimore, managing agent. Philadelphia-New York-Glasgow service.

PUGET SOUND, 7482 tons, assigned Baltimore Steamship Co., Baltimore, managing agent. Baltimore-Hampton Roads-New York-Glasgow service.

Intercoastal steamship lines now are offering refrigerated space which is expected to facilitate the movement of perishables to Atlantic terminals. The first vessel of this character took 200 tons of frozen fish for New York.

President James A. Farrell has called the National Foreign Trade council into annual meeting at Philadelphia, May 10, 11 and 12.

Equipment Used Afloat, Ashore

Vacuum Pump—Rivet Chuck—'Old Man'—Ash Ejector

FRANK HOLDEN, Cleveland, has worked out a plan of bucking up rivets by vacuum which offers interesting possibilities in the fabrication of steel and iron on land and sea. The principle is simply to harness atmospheric pressure and put it to work.

High vacuum, that is vacuum to within ¼-inch of barometer, made possible and guaranteed to hold at this figure, is the prime cause of this plan becoming practical. The pump which produces this high vacuum, and maintains it, is a new pump in principle—roto piston in operation—on which William A. Hatcher, vice president and chief engineer of the Crescent Pump Co., Detroit, has secured a basic patent.

The pump in which this company is now specializing has a capacity of 53 cubic feet of free air per minute, or approximately 3200 feet of free air per hour. It measures 21 x 18 x 14 inches over all and weighs 171 pounds, which is claimed to be only one-tenth of the weight of various other pumps of similar capacity as to volume. This pump requires no foundation to work from and is direct driven by a 5-horsepower motor. The pump and motor can be placed on a 4-wheel truck and taken or set up in any place. In structural work, it can be taken from floor to floor, as construction proceeds, without any trouble, and set up as easily.

The principle of the hold-on, or bucking up appliance, is as follows: Air is exhausted from the base of the hold-on which is hollow, the outer edge being sealed with a rubber gasket to maintain the vacuum and to seal all unevenness of the plate against leakage. An upright about 2 inches high has a cross bar. From one end of this bar is a header-in which covers the rivet. On the other end is an adjustable screw which takes up all play of the rocker. When the vacuum valve is opened, the air is exhausted from the base and the atmospheric pressure comes into play on the outside of the base.

The diameter of the vacuum cup or base of the hold-on in the accompanying sketch is 5 inches, its area being 19.64 square inches. Multiplying this by an atmospheric pressure of 14.6 pounds per square inch—given by vacuum to within ¼-inch of barometer—gives a holding power, or pulling power, or resistance, of 286.74 pounds. This does not take into consideration the added leverage that the rubber gasket gives, which easily increases the resistance of the hold-on to more than 300 pounds.

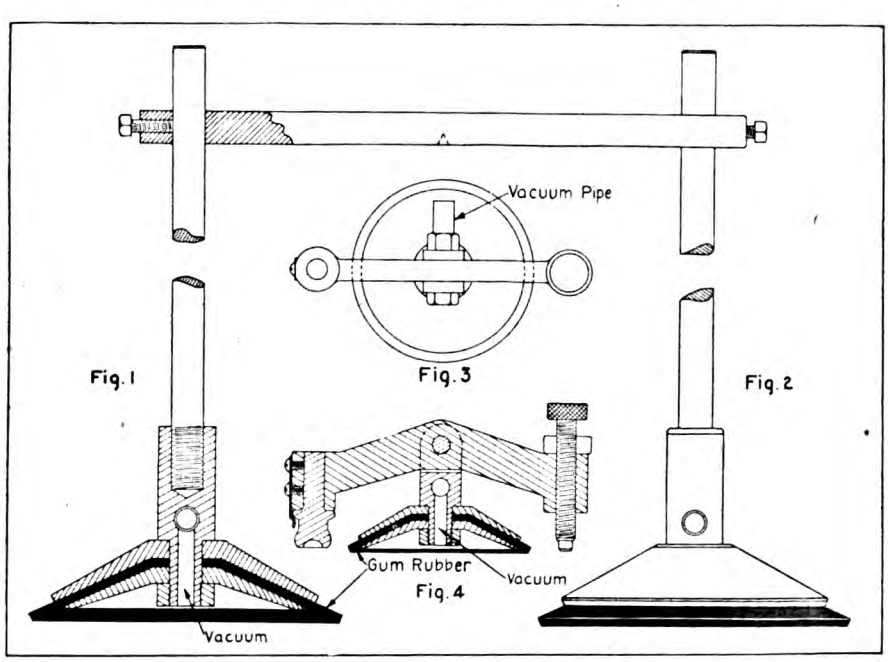
This appliance weighs seven pounds and, it is claimed, can be placed wherever a man can put his hand and is easily adjusted. Delivery of power against the rivet header-in greater than 300 pounds would be required to break the vacuum. A man with a dolly bar weighing about 20 pounds can buck up a rivet against a high pressure air hammer and the maximum stress or strain that he can exert against a rivet is not more than 80 or 100 pounds. The designer calls attention to the difference between such efficiency of the man bucking-up and the rivet-hold-on, held constantly in position by atmospheric pressure which is unwavering.

The vacuum hold-on requires no pipe extensions or base, or fulcrum, from which to work. Wherever a rivet is placed, on a top, bottom, or side plate, all that is required is a space sufficient for the vacuum cup to be placed, and when the air is exhausted from the cup, it sticks like a barnacle to a boat's bottom and takes hold with a resistance of 300 pounds in the case of the 5-inch cup, or 1200 pounds in a 10-inch cup. It is claimed that a vacuum hold-on will take hold in 1/100 of a second while one 53-cubic-foot pump will take care of a dozen vacuum hold-ons.

Vacuum can be piped to any distance and maintain its full power because vacuum absolutely eliminates friction. In this respect, it is the very opposite to high pressure which diminishes with the distance.

Is there any one around a shipyard, from the seasoned old mechanic to the raw apprentice, who does not know what an "old man" is? The accompanying sketch shows a double old man. The single type has a 10-inch base and exerts a constant force of 1200 pounds in forcing a drill to work, the double upright has a power of 2400 pounds. The single type weighs 34 pounds and the double about 45 pounds. Both are adapted to either electric or air drills. Any one who has had experience with the rigging of an old man and the consequent labor attendant upon shifting it from place to place, can appreciate the economy sought in designing this type.

The principle of operation of the old man is the same as that of the rivet hold-on or bucker-up. The air is exhausted from the base which is 10 inches in diameter, exclusive of the rubber gasket which seals the cup against leakage, due to unevenness of the plate. The atmospheric pressure then comes into play, holding the sin-



FIGS. 1 AND 2—SECTION AND ELEVATION OF 2-STAND VACUUM "OLD MAN"—FIGS. 3 AND 4—PLAN AND SECTION OF 10-INCH VACUUM RIVET HOLD-ON WHICH HAS A RESISTANCE OF 1200 POUNDS

gle upright with a force of 1200 pounds, and the double with a force of 2400 pounds.

A rivet hold-on or bucker-up would have a holding power of 1200 pounds if 10 inches in diameter. The hold-on can be made in a variety of shapes. A hold-on made dumb-bell shape with two 6-inch square hollow bases and an adjustable screw with a header-in cup for bucking up the rivets, would be practically as efficient as the 10-inch hold-on, weigh two-thirds as much, and take up about two-thirds the room of a 10-inch-base hold-on. All of these appliances can be used from any angle in any position.

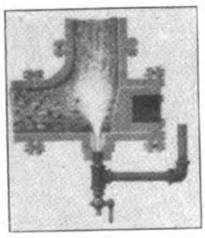
The designer claims that with these appliances more and better work can be done at a reduction in cost. He further claims that any one can handle these appliances with ease, that the gruelling work of bucking-up rivets on ship, tank, boiler, and structural work, can be dispensed with; that either the passer or the bucker-up can be dispensed with all the time and both of them part of the time, when the work is accessible to the heater and that rivets will be fully upset.

At a demonstration at the headquarters of the Chicago Pneumatic Tool Co., Brooklyn, N. Y., the 5-inch hold-on withstood the blows of a hammer with an 8-inch stroke—and upset rivets driven cold.

Many letters commending the South American service instituted by the United States shipping board, have been received by W. J. Love, vice president, in charge of traffic of the Emergency Fleet corporation. Among these is one from E. Palmer Burnham, of the Alvey-Ferguson Co., Cincinnati, who sailed for Buenos Aires last October on the Steamship HURON, and who recently returned on the steamship SOUTHERN CROSS.

New Ash Ejector

A duplex ash ejector for steamships is shown in the accompanying illustration. This equipment is a single pipe system, so arranged that ashes may be discharged on port or starboard side at will. The ejector is a product of the C. W. Brown Engineering Co., Inc., headquarters at 53 West Jackson boulevard, Chicago. It is said to be the only single pipe system manufactured. It can be installed below the boiler room floor, where it is desirable to eject ashes on either side of the ship. The space requirements are said to be small.



SECTIONAL VIEW OF ASH EJECTOR

Late Marine Patents

Copies of any one of these patents can be obtained by forwarding 25 cents in stamps to Siggers & Siggers, patent attorneys, National Union building, Washington, and mentioning MARINE REVIEW.

1390474—Life preserver, Wiley P. Tibbits, Charleston, S. C.

1390624—System of electrical ship's propulsion, Benjamin G. Lamme, Pittsburgh, assignor to Westinghouse Electric & Mfg. Co., a corporation of Pennsylvania.

1390733—Construction of turbines, Paul Spiess, Zurich, Switzerland.

1390848—Ship's bells clock, Frederick Wehninger, Waterbury, Conn., assignor to Waterbury Clock Co., Waterbury, Conn.

1390935—Life boat or raft, William Stewart, Newark, N. J.

1390993—Airship, Jean Heppel, Newark, N. J.

1391305—Navigational instrument, Robert A. Elridge, Herne Bay, England.

1391380—Deep sea construction, W. Griesser, Joplin, Mo., assignor to William C. Griesser, Pittsburgh.

1391389—Construction of ships, James F. King, Glasgow, Scotland.

1391421—Nonsinkable ship, S. Sokolowski and Jacob Forgiel.

1393780—Observation apparatus for submarines, Elmer A. Sperry, Brooklyn, N. Y.

1393857—Ship's light, Thomas Utley, Liverpool, Eng.

1393894—System of raising sunken ships, Daniel F. McGill, Portland, Oreg.

1393943—Pipe laying apparatus, William I. Chapman, New York, assignor to Merritt & Chapman Derrick & Wrecking Co., New York.

1394091—Ship's davit, Harry B. Hills, Tompkinsville, N. Y., assignor to Steward Davit & Equipment Corp., New York.

1394180—Life preserver, A. P. Lundin, Bayside, N. Y., assignor to American Balsa Co., Inc., New York.

1394271—Torpedo, E. S. R. Brandt, Newport, R. I.

1394957—Ship's bell clock, Frank X. Wehrle, Thomaston, Conn., assignor to the Seth Thomas Clock Co., Thomaston, Conn.

1395000—Ocean going vessel, F. A. McRae, Montreal, Can.

1395112—Wheeled boat, John A. Howell, deceased, Warrenton, Va., by Belle Howell Bohn and Frances A. Nevill, executors, Washington.

1395580—Ship retarding device, Louis Jonesic, Joliet, Ill.

1395813—Ship protector, Francesco Geroianne, San Antonio, Tex.

1395875—Vessel raising device, Joseph Szalay, Vicksburg, Miss.

1395889—Boat, Charles J. Baer, Riverside, Ill.

1396327—Water turbine and the like, Max Haeberlein, Mountain Lakes, N. J., assignor to Worthington Pump & Machinery Corp., New York.

1395924—Towing submerged objects such as submarine torpedoes, Francis Peabody Magoun, Cambridge, Mass.

1396820—Turbine pump, Andrew C. Douglass, Sonoma, Cal.

1396831—Speed boat, Elliott Gardner, Colonie, N. Y., assignor to Albany Boat Corp., Watervliet, N. Y.

1397086—Steam turbine and governor, Charles W. Dake, Chicago, assignor to the Pyle-National Co., Chicago.

1397248—Life preserver, Albert D. Frantz, Battle Creek, Mich.

1397405—Ship protector, Yuraj Dedik, Boswell, Pa.

1397487—Keel blocks for building ships, John M. Leighton, Westminster, London, England, assignor to Concrete Piling Ltd., Westminster, London, England.

1397812—Turbine governor-valve, Benjamin J. Lacy, Houston, Tex.

1398124—Turbine, H. M. Cake, Philadelphia.

Business News for the Marine Trade

Freight handling and conveying machinery, cranes, etc., will be installed in the 5-story warehouse and loft building and 2-story superstructure on a pier 580 feet in length, to be constructed at Havana, Cuba, by the Havana Docks Corp. under a lease for the United Fruit Co., 17 Battery place, New York. The structures will approximate 320,000 square feet of floor space. Contract for the building has been let to the Turner Construction Co., 242 Madison avenue, New York, and will require more than 12 months for completion.

The bureau of supplies and accounts, navy department, Washington, recently took bids for 29,500 pounds of sheet steel for the Philadelphia navy yard; also for 400 ball bearings and a quantity of bolts, screws, washers, etc.

The Emergenc Fleet corporation has placed the Bristol, Pa., plant of the Merchants' Shipbuilding Corp. on the market. The equipment includes eighteen 15-ton tower cranes, nine 10 and 15-ton gantry cranes and one 15-ton portal pier crane; also power house complete with turbo generators, boilers, pumps, etc., and machine and tool shop equipment.

Bids recently were taken by the bureau of supplies and accounts, navy department, on lathes, drills, grinders and other machine tools for the Norfolk, Va., navy yard.

The Aeromarine Plane & Motor Co., Locust street, Keyport, N. J., is arranging for increased production of 25 airplane bombers for the war department.

Freight handling and conveying machinery, hoisting equipment, etc., will be installed on the new piers to be constructed by the port development commission, Baltimore. A fund of $10,000,000 has been arranged for the entire project and it is understood the initial expenditure will approximate $2,000,000.

The bureau of yards and docks, navy department, has had plans prepared for new coal handling equipment to be installed at the Boston navy yard, and will call for bids at an early date.

The Jefferson Co., 732 Jefferson street, Hoboken, N. J., recently was inquiring for a 200-horsepower boiler.

The property of the National Ship Supply & Machinery Co., Sollers Point, Baltimore, recently was offered for sale, including buildings, machinery, etc.

Conveying machinery, etc., will be installed

by the port commission, Norfolk, Va., at the new docks and warehouses to be erected at Sewells Point, bids for which will be called for soon.

The Todd Shipyards Corp., 25 Broadway, New York, has acquired property of the Mobile Shipbuilding Co., Mobile, Ala., for the establishment of a new branch plant.

Capitalized at $20,000 the Sanmor Shipping Corp., New York, recently was incorporated by F. Sanders and J. E. and T. W. Morrell. The company is represented by J. C. Lewis, 347 Fifth avenue, New York.

The Empire Shipping Corp. recently was incorporated in Delaware with a capital stock of $100,000. The company is represented by the Corporation Guarantee & Trust Co., Philadelphia.

The Commercial Plant Steamship Co. has been incorporated under the laws of Delaware to own and operate vessels, etc. The incorporators of the company are L. F. Reed, Wallace Ingraham, H. P. Malloy and the Corporation Trust Co. of America.

A freight service between New York, Glasgow and Irish channel ports is planned by the Baltimore Steamship Co., which has recently established a branch office in New York. All steamers will call at Philadelphia and Halifax. The shipping board has allocated to this company two steamers for the West Indies trade.

Harriss, Magill & Co., Inc., 425 Lafayette building, Philadelphia, recently was appointed agent for the Societa Nazionale de Navigazione which maintains a service between Philadelphia, Genoa and Naples.

B. H. Sobelman, for many years associated with W. J. Grandfield & Co., has resigned and will conduct a general steamship agency and ship brokerage business under the firm name of B. H. Sobelman & Co., with offices at 127 Walnut street, Philadelphia.

Capitalized at $1,000,000, the Strauss Engine & Machinery Co. recently was incorporated under the laws of Delaware to engage in the manufacture of engines, boilers, machine tools, etc.

The Victor Radio Corp., Dover, Del., recently was incorporated in Delaware with a capital stock of $500,000 to erect and equip radio plants and stations.

The Acidproof Bronze Co., Wilmington, Del., recently was incorporated under the laws of Delaware with a capital stock of $200,000, to manufacture bronzes, etc.

The Radio Appliance Corp., New York, has been incorporated under the laws of New York, with a capital stock of $200,000, to manufacture instruments, appliances, etc., by F. R. Fox, 1603 Union street, Brooklyn, N. Y., and others.

The Italia-America Shipping Corp. has been incorporated with a capital stock of $100,000, by A. Ruspini, Great Neck, L. I., and others. The company will operate vessels.

The Winnisimmet Shipyards, Chelsea, Mass., has been sold at auction for $200,000 to H. F. Winslow, Boston. The sale included the land, buildings, and a marine railway completed two years ago.

Capitalized at $500,000, the Blumenthal Tank Ship Co., Dover, Del., recently was incorporated under the laws of Delaware to engage in the operations of vessels of all kinds.

The Eastern Shipping Co., Inc., Dover, Del., recently was chartered under the laws of Delaware with a capital stock of $200,000, to own and operate boats of all kinds.

Organization of the Triangle Forwarding Co., Inc., recently was announced. The new company, which has offices at 29 Broadway, New York, is headed by Robert A. Hoy, formerly with Charles F. Seeger, Inc.

The Hoist & Crane Engineering Co., Inc., 102 North avenue, Plainfield, N. J., recently was incorporated to manufacture hoisting machinery, etc., with a capital stock of $125,000.

The Netherlands Corp. for Overseas Trade, Inc., New York, recently was incorporated with a capital stock of $500,000, by C. Russell, 152 East Twenty-second street, New York, and others.

Capitalized at $100,000 the Piermont Navigation Corp., Wilmington, Del., recently was incorporated under the laws of Delaware to build, own and operate vessels of all kinds.

The Standard Shipbuilding Corp., Richmond S. I., N. Y., recently was placed in the hands of receivers, John J. Fitzgerald, Albert Conway and William A. Young, who were appointed by the court.

Business Changes

THE Davis-Bournonville Co. and the Air-Reduction Sales Co. were consolidated on March 17. This amalgamation unites the sales and service staffs of both companies and increasess the oxyacetylene facilities available for the welding and cutting gas and apparatus fields. The oxyacetylene research work of the Davis-Bournonville Co. will be continued. The enlarged activities will be handled by the Air Reduction Sales Co.

* * *

Confusion due to the fact the name, the Medart Patent Pulley Co., Inc., conflicted with the more complete line of power transmission machinery manufactured by the company, has caused the title of the organization to be changed to the Medart Co. Headquarters continue at Potomac and De Kalb streets, St. Louis.

* * *

E. L. McConnaughey & Co., Inc., have been appointed general western freight agents of the North German Lloyd.

* * *

The London agency for the American-Hawaiian's Pacific-European service has been taken by E. H. Mundy & Co., Ltd.

* * *

William H. Muller & Co., who have offices in New York, have been made general passenger agents of the United American lines at London.

* * *

The General Steamship Co., San Francisco has been appointed Pacific coast agent for the Transatlantic Steamship Co. of Gothenberg, Sweden.

* * *

New quarters have been taken in a building at 551 Market street, San Francisco, by the Toyo Kisen Kaisha, under a 10-year lease.

* * *

B. F. Dillingham & Co., Honolulu, have been appointed agents for the Los Angeles Steamship Co.

* * *

The Dollar Steamship line has moved its offices to the fourteenth floor of the International Commerce building, 11-15 Moore street, New York.

* * *

B. H. Sobelman, for many years associated with W. J. Grandfield & Co., Philadelphia, has severed connections with that firm and will conduct a general steamship agency and ship brokerage business under the name of B. H. Sobelman & Co., at 127 Walnut street, Philadelphia.

New Trade Publications

PNEUMATIC TOOLS—The Independen Pneumatic Tool Co., Chicago, has published a large folder in which pneumatic and electric tools are described and illustrated. These include drills, grinders, hammers, hoists, riveting hammers, etc. Specifications are given.

AUTOMATIC STOKER—Automatic stokers for small plants are described and illustrated in a folder recently published by the Combustion Engineering Corp., New York.

GRATE BARS—The Thomas Grate Bar Co., Birmingham, Ala., has published a number of 4-page leaflets in which grate bars are described and illustrated and their applications pointed out. In operation the elliptic shaped, eccentric movement of the grate bars, slips under the fuel or fire bed, peels the ash from its lodgment and deposits it into ash pit and does not disiturb the fire, tearing the fuel bed into streaks, seams, holes and pockets. As a result the fire is kept at the highest state of efficiency, it is claimed.

ELECTRIC TOOLS—The Wodack Electric Tool Corp., Chicago, is circulating an illustrated bulletin in which a combination portable electric drill and grinder is described and illustrated. This tool is designed for shops and factories where drilling and grinding operations are performed on such a scale as not to warrant the purchase of two separate machines. The tool can be used for drilling in metal or wood and with grinding wheel attachment it is claimed it will cover the average run of grinding, polishing and buffing. It has a drilling capacity of ⅛ inch to ⅝ inch in mild steel, ⅛ inch to 1¼ inches in hard wood. When used as a grinder it carries a ¾-inch x 6-inch grinding wheel. Two separate speeds are provided, the high speed for grinding and the low for drilling. The speeds are changed by a speed changing device which operates on the inside of the casing. It is of the positive type and remains on either high or low speed as set by shifting the speed change knob in and out.

BRONZE PRODUCTS—The American Manganese Bronze Co., Philadelphia, is circulating a large 36-page booklet in which various bronze products are described and illustrated as well as the company's plant and facilities for manufacturing them. These products include castings, ingots, forgings, sheets, rods, rolls, shapes, etc. In addition to this booklet the company has published a number of small leaflets each devoted to an individual subject. One is on valve stems, another on ingots, another on a special bronze, another on rods and another on bronze gears.

WIRE ROPE—The Williamsport Wire Rope Co., Williamsport, Pa., has published a large 4-page illustrated folder in which wire rope is described. A feature of this rope is the patented tape markers which appear in the center of the core, clearly indicating the various grades of rope. These markers do away with the necessity of an expensive laboratory test in order to determine the various grades of rope.

CUTTING TORCH—The Air Reduction Sales Co., 342 Madison avenue, New York, has issued a new catalog leaflet describing its cutting torch. The leaflet completely describes the various features of design and construction of this apparatus, and in addition gives tables showing the thicknesses of metals that can be cut, the pressures of oxygen and acetylene necessary, and the gas consumption in cubic feet per hour when using tips adapted to the cutting of steel, cast iron or rivets. Sectional views of the torch are included.